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THE JOURNAL OF GENERAL EDUCATION

1-3
OCT 1946 —
July 1949

VOLUME I October 1946 NUMBER 1

STATE UNIVERSITY OF IOWA

IOWA CITY

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Journal

The Journal of General Education

published quarterly by the State University of Iowa, is intended to serve instructors and administrative officers in liberal arts colleges, professional schools, teachers colleges, junior colleges, and the secondary schools. More specifically, it is designed to provide an outlet for thoughtful discussions of the issues and experiments of general education. To assure representative and timely content, a board of editorial consultants assists the editor each quarter in selecting the papers to be included.

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PUBLISHED October, January, April, and July. . . . SUBSCRIPTION PRICE: $2.00 a year. . . . EDITORIAL OFFICE: 108 Schaeffer Hall, Iowa City, Iowa. . . . Checks should be made payable to *The Journal of General Education*, Department of Publications, State University of Iowa, Iowa City.

Application for entry as second class matter is pending at post office in Iowa City, Iowa.

Contents for October 1946

THE GENERAL EDUCATION MOVEMENT (AN EDITORIAL), Earl J. McGrath, *Dean of the College of Liberal Arts, State University of Iowa; Editor, The Journal of General Education* . 3

THE COMPONENTS OF GENERAL EDUCATION, Virgil M. Hancher, *President, State University of Iowa* 9

LIVING TOGETHER UNDER LAW, Wiley B. Rutledge, *Associate Justice, United States Supreme Court* 17

EDUCATION FOR THE GREAT COMMUNITY, W. H. Cowley, *Professor of Education, Stanford University* 22

LIBERAL EDUCATION IN THE MILITARY FORCES (A SYMPOSIUM), Dwight D. Eisenhower, *Chief of Staff, United States Army;* Chester W. Nimitz, *Fleet Admiral, United States Navy;* A. A. Vandegrift, *Commandant, United States Marine Corps* . 34

EMOTIONAL OUTCOMES OF GENERAL EDUCATION, Robert J. Havighurst, *Committee on Human Development, University of Chicago* 39

MATHEMATICS IN GENERAL EDUCATION, Cuthbert C. Hurd, *Dean, Allegheny College* 45

THE PLACE OF SOCIAL SCIENCE IN GENERAL EDUCATION, Elbridge Sibley, *Social Science Research Council* 52

PATTERNS OF COURSES IN GENERAL EDUCATION, W. W. Charters, *Director of Research Service, Stephens College* 58

THE CHALLENGE OF GENERAL EDUCATION FOR THE SECONDARY SCHOOLS, Gordon N. Mackenzie, *Professor of Education, Teachers College, Columbia University;* Hubert Evans, *Assistant Professor of Natural Science, Teachers College, Columbia University* 64

THE FUTURE OF THE SOCIAL STUDIES, W. K. Jordan, *President, Radcliffe College* 72

GENERAL EDUCATION AT HARVARD, Byron S. Hollinshead, *President, Coe College* 76

The General Education Movement

(AN EDITORIAL)

A GENERAL education movement is under way. It is moving across the educational landscape with speed and force. It will sweep away many conventional forms of high school and college education. It will cause major modifications in professional and technical education. It will radically change requirements for graduate degrees. It will profoundly affect the thinking and the lives of our people.

What is general education and what are the characteristics of this movement?

General education is that which prepares the young for the common life of their time and their kind. Hence it includes that fund of knowledge and beliefs and those habits of language and thought which characterize and give stability to a particular social group. It is the unifying element of a culture. It embraces the great moral truths, the scientific generalizations, the aesthetic conceptions, and the spiritual values of the race, ignorance of which makes men incapable of understanding themselves and the world in which they live. General education prepares the individual for a full and satisfying life as a member of a family, as a worker, as a citizen, and as an integrated and purposeful human being. It does not overlook differences in talent, interest, and purpose. Nor does it attempt to form everyone in a single mental and spiritual matrix. It seeks to make possible the maximum development of the individual consistent with the general good. It attempts to provide for the continuous enrichment of life by encouraging respect for inventive genius and tolerance for variations in opinion. But general education rests on the principle that deviations in thought or in act must be based upon understanding rather than ignorance of the purposes, standards, and values of society.

To this end general education provides youth with a knowledge of the origins and meaning of the customs and political traditions which govern the life of their time. It cultivates habits of effective writing and speaking of the mother tongue. It develops the faculty of critical thinking and the capacity for intellectual workmanship. It introduces the student to the moral problems which have perplexed men through the ages and acquaints him with the solutions they have devised, to the end that he may meet similar problems in his own life with a sense of the just and the proper. General education seeks to instill attitudes and understandings which form the essence of good citizenship. It supplies the factual basis of mental and physical health and encourages practices of eating, sleeping, thinking, and playing essential to the maintenance of a sound mind in a sound body. It sharpens the student's aesthetic awareness in order that he may appreciate beauty in its multiform expressions and create it in his own life.

General education is not concerned with the esoteric and highly specialized knowledge of the scholar. It does not include the factual minutiae of investigations at the frontiers of knowledge. Nor does it attempt to cultivate the special abilities and habits of mind peculiar to the various professions and other vocations. Protagonists of

general education do not decry professional education, research, or advanced specialized study. They maintain, however, that these activities, laudable in themselves, should not prevent high schools and colleges from discharging their first responsibility of teaching young people how to live. To be sure, the increase of specialized knowledge, at least in some fields, must continue even at an accelerated pace. But the time between the discovery of new truth and its dissemination to the mass of the people is too long. For example, scientific knowledge in the field of sanitation essential to the public health, demonstrated to be true decades ago, has not yet become a part of the thinking of a large percentage of our people. Thoughtful men are agreed that in the present crisis the rapid spread of knowledge is vitally necessary for survival. Advocates of general education urge the same diligence in diffusing knowledge that has caused its rapid increase.

These purposes of general education are not new. They animated the efforts of those who established the first schools and colleges for the perpetuation of the liberal tradition in this country. But liberal education has been neglected by those who should have been its staunchest defenders. Teachers of the liberal arts whose first purpose should have been the making of men have been making subject matter or, what is worse, in many instances trying ineffectually to do so. They have forgotten Montaigne's admonition that "The object of education is to make, not a scholar, but a man." Since the early part of the nineteenth century the German university tradition, with its emphasis on specialization and the scientific analysis of the data of life, has largely determined the character of higher education in America. This methodology apt in gaining an understanding of some aspects of life has been applied with diminishing return to materials as refractory to its techniques as literature, the fine arts, and religion. This philosophy of education has in large part been responsible for the shifting of the teacher's attention from students to subject matter. The efforts of teachers to increase knowledge, often abortive, have diverted their attention from the task of making it useful in the lives of ordinary citizens. Knowledge for its own sake has been the dominant conception of higher education.

At the time of the first world war a re-examination of the purposes of college instruction began. The ignorance of our American traditions and political institutions revealed by those who were supposed to fight to preserve democracy alarmed members of the military forces and laymen alike. A program of indoctrination established by the services was followed not long after the end of the war by the development at Columbia University of a broad course of study in the social sciences entitled Contemporary Civilization, and at the University of Chicago of a course in the natural sciences called The Nature of the World and of Man. These, the prototypes of other curricular reorganizations,were an attempt to extend courses beyond the limits of single subjects and to bring the material of several disciplines into direct relationship. Many other innovations of this type have since appeared but they have been sporadic, unrelated, and often unpopular even in the parent institution. Now, however, the scattered reforms of the twenties and thirties are becoming nearly universal. Though no completely acceptable pattern has yet emerged, the need for revision and reorientation of college instruction is now widely recognized. The general education movement represents an effort to achieve reforms long overdue.

The salient feature of this movement is a revolt against specialism. The most striking characteristic of high school and college curricula in recent decades has been the swift and steady addition of new subject matter. The full complement of courses in Harvard College in 1825 was thirty-three. Now more than 800 are offered. Many new units of college instruction are composed of materials of interest to only a small percentage of advanced students, though more than half the students who enter most institutions leave by the end of the sophomore year. Even elementary courses reflect the specialized interests of the scholar who intends to devote his entire life to the exploration of

a small aspect of a single subject. Much instruction is systematically organized on the assumption that all students will pursue advanced courses. This type of education, however fitting for the small and select group of nineteenth century students who continued their education beyond the elementary school, is unsuited to the needs of high school and college students today who constitute a large percentage of their age groups.

Another characteristic of the general education movement is its reaction against vocationalism. Courses with a vocational orientation have multiplied almost as rapidly as the highly specialized instruction in the common disciplines. Courses with narrow vocational objectives in such subjects as library science, music, technology, and accounting, all suitable subjects in their proper places and properly taught have been added to the curricula of liberal arts colleges. By achieving an equivalent status with mathematics, history, and philosophy as liberal subjects they have given a vocational complextion to the programs of many liberal arts students. Students have thus been prevented from gaining the broad outlook on life and the intellectual tastes which should characterize those who have had the advantages of liberal education. It is only fair to add that the older disciplines have also often been taught with a similar vocational and illiberal purpose.

It is to the credit of educators in the professional and vocational schools that they are as much concerned about the need for general education as are teachers in the colleges of liberal arts. Many of the strongest advocates of broader learning are leaders in the older professions of medicine, law, and engineering. They have been openly critical of institutions which offer only a limited range of subjects closely related to professional practice, and those which encourage students to elect preprofessional courses in departments akin to their future vocations. They advocate a more representative course of study which will provide the basis for intelligent and well-informed living as both a professional practitioner and a thoughtful citizen. They share with other educators a desire for a broader education for all youth regardless of social background, intellectual interests, or vocational objective.

The reaction against specialism and vocationalism is accompanied by an effort to integrate the subject matter of related disciplines. The borders between even closely related departments are more carefully guarded than the frontiers of hostile nations. No academic sin is visited with more immediate and general disapprobation than that of speaking "out of one's own field." Subject matter is systematically organized in ladder-like units, up the rungs of which the student climbs to the empyrean of learning sublimely unaware of other areas of knowledge or of the teeming world of real life which he leaves further behind him with each step into the rare atmosphere of specialized knowledge. This intellectual isolationism is no less stultifying to the life of the mind than its political counterpart is to the life of the nation.

A number of curricular reorganizations, of which survey and core courses are the most common, have been designed to achieve greater breadth of knowledge and an interrelationship of the various branches of learning. A survey of the social sciences, for example, frequently contains elements of sociology, political science, psychology, and history. An alternate scheme for integration attempts an organization of appropriate materials from several fields around certain social problems such as crime and poverty. Though there is some dissatisfaction with efforts to interrelate the various divisions of learning this results mainly from a failure to effect that interrelation and not from any doubt concerning the desirability of doing so. These efforts to organize the curriculum in broader and more meaningful units may be expected to continue.

To increase further the scope of education and to combat specialism a larger proportion of the total college program is being prescribed. Though unrestricted election disappeared many years ago, students have generally been permitted to satisfy distribution requirements by electing courses from each of the major areas of knowledge. Under this

plan, courses in sociology, history, anthropology, political science, and economics have been assumed to be sufficiently alike in content and intellectual exercise to be fitting substitutes for one another. In addition to these requirements students have usually been compelled to pursue courses in English composition and literature, foreign language, and physical education; and in religion in schools with a denominational tie. The remaining credit for the bachelor's degree has commonly been assembled from a wide range of departments and at varying levels of difficulty according to the student's abilities, his vocational objectives, the grading practices of individual members of the faculty, the class hour, or the interests of his friends. Even within a single institution this practice has produced an infinite variety of programs with only a small common element. College students often pursue courses of study which exhibit either a high degree of concentration in one or two subjects or a meaningless collection of miscellaneous courses. Their thinking and their lives reflect this intellectual provincialism and disorganization. Communication and united action on any of the major problems of their time are difficult.

Though the personal tastes and talents of students continue to be recognized, an increasing number of general studies are prescribed. In some institutions these prescribed courses, which often make up a large proportion of the freshman and sophomore years, are separately administered through a lower or junior division. More recent practice, however, neither confines general education to these years nor separates the teachers of such courses from those who give advanced instruction. The distinction between general studies and others rests on the character of the teaching and the purposes of courses rather than upon their position in the four-year sequence. This functional grouping of courses and staff throws into high relief the difference between general courses for non-major students and those for students with specialized or professional interests.

Exponents of general education believe that education should be more closely related to the vital needs and problems of human beings. Knowledge for its own sake is a luxury which society can ill afford. The acceptance of this point of view implies neither a materialistic nor a utilitarian philosophy of education. It does imply the rejection of policies and practices which foster or condone memoriter learning of factual data with little consciousness on the student's part of their meaning or significance in the everyday lives of human beings. A matter so important as that of having the student see the relationship between instruction and life cannot be left to chance. This educational objective must guide the day-by-day activities of teacher and student alike. Courses for those who do not intend to make the study of the subject their occupation must be organized around life situations. Even instruction for the future scholar might be more vital and enduring if it were based on the elementary principles that the student should proceed from the concrete to the abstract and from the known to the unknown.

Efforts to enliven instruction by using real issues and concrete experiences as a point of departure are replacing a methodology of teaching based on the internal logic of the subject. Even subjects as abstruse as philosophy and religion are being revitalized through the use of the moral conflicts students encounter in their daily lives as the introduction to theoretical discussions and philosophical generalizations. Several church-related colleges, for example, have reorganized classroom instruction and arranged campus life to produce religious attitudes and traits of character which bookish instruction in religion and ethics had failed to create. For the general student instruction which begins with current intellectual, social, and ethical problems and causes him to derive his own well-reasoned solutions is replacing historical and systematic study of philosophical treatises. The methods employed by the great philosophers in dealing with the persistent intellectual and moral questions of mankind, as perplexing to the youth of today as they were to earlier generations, are illustrated by carefully chosen selections without involving a complete analysis of their works.

Motion pictures are another example of an effort to make instruction more real and immediate. They bring students of geography into direct contact with remote parts of the world which in the past have been inaccessible except by means of verbal description. Recent emphasis on the spoken word in the study of foreign language again shows the tendency to replace memoriter methods by active participation in the learning process. The revolt against the philosophy of *knowledge for its own sake* is also apparent in the tendency to define the objectives of general education operationally in terms of the behavior the student may be expected to exhibit after learning has occurred. The ends of education are described as attitudes, activities, relationships, and abilities; not as mastery of this or that body of fact, or the acquisition of this or that attribute of mind resulting from the study of a specific subject. The Harvard Report, *General Education in a Free Society*, for example, sets forth four major objectives of general education all of which are described in functional terms directly related to the behavior of human beings — the ability to think, to communicate, to make valid judgments, and to evaluate moral situations.

And lastly, those interested in general education seek an improvement in the teaching of the general student. Changes in the curriculum and new teaching aids will not automatically improve instruction. Unless the teacher of general courses is prepared specifically for his professional duties and unless he accepts them with enthusiasm, his teaching will often be spiritless, aimless, and ineffectual. Unfortunately, few institutions in our educational system are now able or willing to prepare such teachers. Catalogue statements reveal little relationship between the purposes of graduate study and college teaching, the future occupation of the vast majority of graduate students. These institutions produce specialists interested principally in research or in teaching the advanced branches of their subjects. Moreover, preferment in the academic world has gone mainly to those who achieved distinction, not in teaching the multitudes of students in elementary courses, but in the instruction of the relatively few advanced students destined to follow the instructor's calling, or to those who produced a mass of technical literature. Hence, the teaching of elementary subject matter, considered beneath the dignity of the scholar, has often been delegated to young and inexperienced members of the staff who look upon these teaching assignments as a professional apprenticeship. And even when ranking scholars have taught first courses they have often made them highly technical introductions to the subject, ill-suited to the needs of the majority of students who go no further in the field.

Recognizing the inadequacy of this type of teaching, one of America's most eminent scientists, President Conant of Harvard University, has recently criticized it in the following pointed language:

> There seems to be little doubt that those of us who have taught the sciences in college have failed for the most part in accomplishing for the future lawyer, public servant, writer, and business man what we set out to do. First- and second-year courses in chemistry, physics, and biology, for example, are excellent for those who are going on with any of these sciences either as a career or as a field of concentration. But it is the general testimony of former students that for the man who takes only one or two of these courses there is only a small residue left after a few months have elapsed; and this is not surprising. With the tremendous advances in these subjects in this century, it is difficult enough to lay an adequate foundation for the future scientist in his freshman and sophomore years. To attempt in the same courses to instruct those who are interested in science as part of a general education is almost a hopeless undertaking from the start. What seems to be needed here are new types of courses given not by the departments of physics or chemistry or biology, but undertaken by a special staff who will be concerned entirely with the problems of teaching science at the college level as part of a general education.

The advocates of general education seek superior teaching for the hundreds of thousands of undergraduates who will at best receive four years of education beyond the secondary school. They believe that such instruction can be given only by persons dedicated to the task of teaching students who do not intend to become specialists in any academic field, but who need and can profit from instruction which will prepare them for an intel-

ligent, responsible, and full life. These teachers must pursue graduate studies specifically designed to provide a broad knowledge of a major area of learning and the interrelationships among the subjects of which it is composed. Graduate education must also make the prospective teacher conscious of his professional responsibilities and give him teaching experience prior to the time he embarks upon his first full-time teaching assignment as is the practice in the other professions. It must inspire in him a devotion to the ideals of good teachers and to the education of the younger generation for a richer and more reasonable life. This graduate program should be professionally oriented from the very beginning in order that students may begin at the outset to cultivate the habits, attitudes, and practices of the successful teacher. Like all other instructional goals these objectives are achieved only when they are consciously made a part of the educative process. The early success of the general education movement will depend to a large extent upon the willingness of graduate schools to adjust their programs to the needs of college teachers.

These, then, are the salient features of the general education movement: a reaction against specialism and vocationalism; an effort to integrate the subject matter of related disciplines; an increased prescription of representative subject matter; an attempt to assist the student in seeing the relationship between learning and life and in using his knowledge and skills in daily living; and an effort to reform graduate education for teachers to the end that they may bring to the classroom the skills of the master teacher, a broad knowledge of their own and related fields, and a vital interest in the noble task of instructing youth.

Much has already been accomplished in individual institutions to adapt instruction more closely to the emergent needs of contemporary society. Throughout the educational world an ebullient ferment is at work. Faculties are reassessing educational philosophy, policy, and practice. A new educational era has begun. College and high school education are undergoing changes as basic as those of a hundred years ago. Then the ideal of the educated man so tutored as to be at home in forum, office, salon, or mart, in the words of Milton, a man fitted "to perform justly, skillfully, and magnanimously all the offices, both public and private, of peace and war," was abandoned for the ideal of the educated man at home in library, laboratory, or learned society, a man whose schooling can be best described in the words of Seneca, *Non vitae sed scholae discimus*. Now we may expect a return to the earlier ideal of the man educated for the life, the labors, the problems, and the pleasures of his age.

THE JOURNAL OF GENERAL EDUCATION will serve as a medium for the expression of ideas related to this movement. It will present the opinions of those who have considered the philosophical and social implications of the movement and descriptions of the practical experiences of those who have devised new courses of study or attempted innovations in teaching. Seeking to bring to its readers the most critical analysis of the issues of general education from the point of view of all schools of thought, it will publish statements representing widely varying and sometimes conflicting educational philosophies. Thus it is hoped the shortcomings as well as the merits of this movement of determinative significance in the race between education and catastrophe may be made known to the members of that profession which more than any other will decide the outcome of this fateful contest.

EARL JAMES MCGRATH

The Components of General Education

BY VIRGIL M. HANCHER

I

WHAT IS general education and what are its objectives?

General education may be defined negatively on the one hand as the education which is not designed to produce the professional man or the specialist, and affirmatively on the other as the education designed to produce the good man and the citizen. Its goal is the intelligent, responsible, cultured human being. How can such education be most effectively obtained? What objectives should a college have before it in developing a program of general education? In an address before the North Central Association in April, 1944, shortly after the adoption of the new program at Iowa and fifteen months before the issuance of the Harvard Report, I presented four objectives for consideration as interim objectives for our discussion pending agreement upon more fundamental goals.[1] Nothing which has happened since April, 1944, precludes them from serving the same useful purpose now.

The objectives were suggested by analogy to the objectives of the professional schools — not the narrow objectives peculiar to a particular profession, but the broad objectives running through the schools of each of the learned professions. It was evident in all our discussion of educational problems at the time that our satisfaction with professional education greatly outweighed our dissatisfaction, whereas in our discussion of general education, the expressions of dissatisfaction were remarkable for their weight and number. It seemed to be the general belief that our professional schools were coming closer to their avowed goals in educating lawyers, doctors, dentists, engineers, pharmacists, and other professional men than the colleges of liberal arts were in their efforts to provide general education. No doubt there were many factors contributing both to the belief and the result — among them greater selectivity of students, higher compensation for teaching staff, and greater motivation in the student body, to which there might be added greater clarity of objectives. For it seems clear that every professional school desires each of its students to possess at graduation:

1. A minimum body of basic and fundamental knowledge which is commonly possessed by members of the profession;
2. Skill in handling source materials and in adding to one's previously acquired body of knowledge;
3. The ability to think and act in the presence of new and unprecedented situations; and
4. An ethical attitude toward the uses to which a member of the profession may put his knowledge and skill.

These objectives are general and are not limited in any way by the profession they are designed to serve. They have no more relevance to law than to medicine, to medicine than to engineering, to

[1] "Some Interim Objectives in Liberal Education," *The North Central Association Quarterly*, Vol. 29, No. 3, January, 1945.

engineering than to law. They are general objectives from those areas in which our greatest current educational successes are being achieved. And by analogy they have present value in the field of general education.

II

Is there a minimum body of basic and fundamental knowledge which should be the possession of every college graduate? Or, to put the question in another fashion: Is there anything that the college graduate needs to know?

Surely there must be some things that every college graduate needs to know if we accept the view that education, in at least one of its aspects, is a foreshortening of human experience, that it is a means whereby the successive generations are brought up to date and made to feel at home in the world. It is vicarious experience through which a generation may profit from the accumulated knowledge and experience of its predecessors. It reveals to the student the steps by which contemporary civilization has arrived at the position in which he finds it. Any civilization which believes itself worthy of survival will take steps therefore to see that the on-coming generations apprehend its accumulated knowledge, its distinguishing characteristics, and the direction of its development. It would seem, therefore, that, in addition to the special studies which he may need or desire because of his special interests or aptitudes, every college graduate should have some fundamental understanding of the nature of the physical world, of the nature of the biological world, of the development of western civilization, including its basic thought and institutions, of the great texts of literature, and of human relationships and moral values.

It may be that this program is too pretentious. The recommendations of the Harvard report, for example, are less specific and more modest. The report proposes that the student take at least six courses in general education, of which three are new non-departmental courses, to be supplemented by one or more elective departmental courses of a general character in each of the three general divisions of the college, — the humanities, the social sciences, and the natural sciences. The three new non-departmental courses would be, — in the humanities, "Great Texts of Literature"; in the social sciences, "Western Thought and Institutions"; and in the natural sciences, either "The Principles of Physical Science," or "The Principles of Biological Science," but not both.[2]

An interesting, and different, approach will be found in Ortega y Gasset's *Mission of the University*, a book based on lectures delivered to students in the University of Madrid in 1930 but not published in this country until 1944. He designates five fundamental areas of common knowledge:

1. The physical scheme of the universe (Physics)
2. The fundamental themes of organic life (Biology)
3. The historic process of the human species (History)
4. The structure and functioning of social life (Sociology)
5. The plan of the universe (Philosophy)[3]

The European, and particularly the Latin, emphasis is apparent.

Many other proposals have been made in recent years concerning an area of common knowledge, but this is neither the time nor the place to examine them and describe them in detail. Nevertheless, a study of the various proposals might prove valuable. There are wide variations among them, but there is reason to hope, and some ground to believe, that they contain greater similarities and areas of agreement than might be anticipated. They may be separate roads which will lead ultimately to widespread agreement upon a common body of basic and fundamental knowledge for a program of general education.

But it may be urged that such speculation is

[2] *General Education in a Free Society*, p. 195 et seq.
[3] Ortega y Gasset, *Mission of the University*, p. 73.

futile because the fields of learning are too vast, and individual variations in interest and talent are too great, to justify a curtailment of virtually unlimited choice of subject-matter or to permit agreement to be achieved upon a common body of knowledge.

Such views have never been accepted at the elementary level. Children do not choose their environments, nor do they even choose whether or not they will go to school. Up to a point, their choices are not free, but are determined by chance and by authority. The eight-year-old who decides never to go to school again and begins to carry out his choice finds himself caught in the toils of a system that denies his right to such a choice. And in other ways, he is not free. When he speaks, he is not free to speak alien languages; he speaks the language of his parents, his brothers and sisters, his community. Even when he speaks his native tongue, he must learn to speak it with the meanings accumulated through preceding generations. As the late Archbishop of Canterbury pointed out in his Gifford Lectures:

> When the child begins to use ordinary words with their accepted meaning, his mind is appropriating the accumulated thought of centuries; and it is by this accepted deposit of corporate thought that the child achieves such mastery over his experience as he actually reaches.[4]

It will be recognized that in this accumulated thought he inherits the errors as well as the wisdom of his ancestors, but the important point for us to remember is that the child does not choose his environment and he does not create it. He may live much in the world of the imagination, but when dinner-time comes, he returns to the environment which others have created, and he accepts it and is influenced by it because he has no freedom to do any thing else. A child living in an Iowa farming community cannot share the experiences of a child in the U.S.S.R., and a child of the ghetto will live in a different world than a child brought up in rural England and reared in the British tradition. The child's environment, therefore, is largely man made. Because it is man made, it is malleable and may be altered. What environment ought it to be? And what knowledge shall the child know? During many of his formative years, the child can acquire only that knowledge whose existence he is permitted to know and to which he is given access. For the most part, he can know only what the adults, who control the educational system, desire him to know. This places a grave responsibility upon the adults. The manner in which they exercise it can determine whether a culture will be transmitted or whether it will die. Usually they have accepted this responsibility, and have answered these questions, by saying that there are some things that every child should know.

The professions have answered a similar question in the same way.

In each profession there is a body of relevant knowledge far greater than the student can master in the time allotted to study for the professional degree. Aware, as they are, of their inability to give the student all the knowledge relevant to his profession, the professional faculties endeavor to give the student that knowledge which is basic and fundamental and out of which specialized knowledge may come. At the same time, they endeavor to acquaint him with the means by which he can add to his body of knowledge and can keep pace with the developments in the profession.

Agreement upon a common body of basic and fundamental knowledge has not been obtained easily in the professions. Nor has that common body remained constant. New discoveries in science, new developments in the social order, call for changes from time to time. Nevertheless, by trial and error, by discussion and argument, a large measure of agreement has been reached upon a minimum body of knowledge which all members of a profession are expected to know. In medicine, the student is taught anatomy, physiology, bacteriology, pathology, basic elements in the recognition, diagnosis, and treatment of diseases, and similar fundamental matters. In law, the student is taught property, contracts, torts, criminal law, equity, and other basic courses. Specialization is deferred until the graduate years in medicine and

[4] Temple, *Nature, Man and God*, p. 127.

often is acquired in practice by the lawyer. Or the student may never specialize. Whatever his ultimate goal, he covers the basic and fundamental courses because they are basic and fundamental. They are the stuff out of which the refinements and specialties have grown. And because the relevant knowledge is too great to be encompassed within any reasonable number of years of collegiate study, *the professions have been forced to agree* at least in a general way on what is basic and fundamental to the practice of their respective professions.

In the liberal and general studies, however, there has been resistance to agreement upon a common body of basic and fundamental knowledge. And yet those who resisted have often given half their case away, for they have rarely been willing to have the student proceed without restraint to elect any course or combination of courses that he desired. On the contrary, they have usually required the student to acquire some knowledge of the subject matter of each of the great divisions of liberal study, the humanities, the social sciences, and the natural sciences, through the election of a minimum number of hours or courses in each division. Thus the requirements in the natural sciences ordinarily have been satisfied by the election of one or at the most two courses in botany, chemistry, geology, physics and zoology. These courses are widely different, and the student who elects only physics, or only physics and chemistry, will get a different perspective from the one who elects only botany, or only botany and zoology. Those who require some knowledge of the subject matter and discipline of each of the three great fields of knowledge are on the right road, in my judgment, but would they not be further along the right road if they took the position that there are fundamental principles or subject matter of physical science, or of biological science, of social science or of the humanities, cutting across departmental lines that may be combined to give the student a course with valid intellectual content which will at the same time give him a better understanding of the world in which he lives than he has any reasonable chance of obtaining from a single course in a single department?

When I graduated from the State University of Iowa, the Commencement Address was given by Dr. Raymond B. Fosdick, and his subject was: "Wanted: An Aristotle." The speaker pointed to the great increase in our factual knowledge and the need for some synthesis that would integrate our multitudinous facts and far-ranging knowledge so that they might have coherence and meaning for us. Although more than twenty years have passed, no Aristotle has yet appeared. In the meantime our knowledge has increased at an accelerated rate, and we are more baffled by the vastness and incoherence of our knowledge in 1946 than we were in 1924. We stand in awe of the atomic bomb, but its destruction may be quick and clean in comparison with the destructive power of deterioration by frustration resulting from our inability to relate the vastness of our knowledge to the meaning of life.

The possibility of agreement is worth an effort. We lack an Aristotle, but perhaps those to whom this challenge is inviting may by their combined wisdom and strength do the work of a new Aristotle.

III

The objective we have been discussing is highly provocative and calls forth extreme opinions, but even those who contend that there is no common body of knowledge which all students should acquire in a program of general education might be prepared to agree that one who had finished such a program should have acquired in the process a considerable degree of skill in handling source materials and in adding to his previously acquired body of knowledge, whatever that knowledge might be. However, acceptance of this objective brings with it certain corollaries whose full implications may not be widely appreciated.

The first is that it would make possible a frank recognition of the fact that, within the time allotted to general education, we can make only a start in the right direction. We can lay foundations, but

we cannot do a complete job. The professional schools recognize this limitation, and act accordingly. Programs of general education should be designed with equal restraint. To do so would tend to create a different point of view in the student. The colleges of liberal arts, both independent and university connected, have often held themselves out as adequate to produce an educated man in four academic years. And too often their students have read and believed the prospectus! There has been no SEC to pass upon it. As a result, the student, having been assured that he had acquired a complete education in four short years, would graduate with the comfortable belief that the job was done. Nothing remained to be added. Hence, the rarity of finding a college graduate pursuing independent intellectual interests, unrelated to his profession or means of livelihood. Would not the frank recognition that the college graduate is not a completely educated man open a new era in American education?

It would, for example, make the college graduate the logical point of departure for a program of adult education. And adult education could then move on to serve those whose educations had been interrupted before they reached the higher levels.

Adult education in this country has not yet found itself. Up to the present it has developed chiefly in urban centers and has taken two principal forms. In one it appeals primarily to those adults whose education was interrupted or neglected, and it is therefore primarily vocational and professional, although it may be and sometimes is general and cultural. In the other it centers in informal groups which undertake the study of a particular subject matter of common interest, such as painting, music, drama, sculpture, or astronomy. In other countries adult education has not been predominantly vocational, but their experience may not be a safe guide in our own country where education has always been closely associated with improvement of economic status. Certainly in a democratic and an increasingly equalitarian society, each member of society must give attention to his ability to earn a living. It is to be hoped, however, that the greatest strength of adult education will be in those fields which lead to good citizenship and to the good life.

The need for such education is imminent and urgent. In a society that grows more complex each day, an extraordinary degree of knowledge, insight, and wisdom is demanded of the citizens if they are to perform adequately the manifold duties that fall upon them. Furthermore, a society, whose tax structure precludes the survival of a public spirited leisure class, must rely on a broad base of understanding among its citizenry if there is to be an intelligent direction of affairs in the body politic. There is no group in this country qualified by birth, leisure, intelligence, character and public spirit to do for this country what the lords and gentlemen of England were able to do for that country after the accession of Walpole to power, and more particularly after the Reform Bill of the 1830s. Yet if this country is to play a role in world affairs comparable to that which England and the British Empire played for the greater part of two centuries, we must have a citizenry adequate to the role. No program of general education, even though it extends through the secondary school system and into college, will be sufficient to turn out citizens immediately equipped to understand all the problems and implications of modern life, but general education may lay the foundations upon which a superstructure of understanding can be built.

Another corollary of this objective is that it would constitute an invaluable preparation for graduate study and research. Nowhere in the world are there graduate schools to compare with those existing in the United States. Unkind critics occasionally raise their voices to say that the finished products are not always as impressive as the machines that make them, and that we rely too much on money and equipment and too little on sheer mental power in getting our result. And it is true, for example, that many of the basic discoveries in nuclear physics which led to the atomic bomb were made by Europeans who lacked the

varied equipment and rich resources of American laboratories, while the practical applications and engineering procedures necessary for its production were largely the result of American efforts. It remains to be seen whether or not we Americans are more ingenious than profound. Nevertheless, we hear criticism of our graduate schools with great tolerance because of the comfortable assurance that nowhere else can their equal be found in number, variety, or richness of resources. And we feel confident that our preeminence will continue.

Nevertheless, it is the almost unanimous testimony of the deans of graduate schools and the directors of graduate studies that those who enter our graduate schools are not prepared for graduate study. Among other things, they have not acquired skill in handling source materials or in adding to their previously acquired body of knowledge. The development of such skill during the undergraduate years would be a valuable preparation for the graduate years.

Furthermore, the development of such skill and the possession of a common body of basic and fundamental knowledge would add a richness and depth which is sometimes lacking in graduate work and in the writings of graduate students. It would do much to offset the charge of narrow specialism, and it might make possible a recognition of the fact that interpretation and synthesis are no less important than discovery.

IV

But knowledge and the skill to acquire it are not enough. Otherwise our goal would be the production of Quiz Kids. We need more than masses of facts and undigested knowledge. We are acquainted with rare persons who do not know many of the things commonly taught in college, yet who possess a remarkable facility to meet and solve the problems of life. For this, more than mere knowledge is required. We need the ability to think and act in the presence of new and unprecendented situations, a goal emphasized by Professor Albert Einstein on the occasion of the Seventy-second Convocation of the University of the State of New York:

> Sometimes one sees in the school simply the instrument for transferring a certain maximum quantity of knowledge to the growing generation. But that is not right. Knowledge is dead; the school, however, serves the living. It should develop in the young individuals those qualities and capabilities which are of value for the welfare of the commonwealth. But that does not mean that individuality should be destroyed and the individual become a mere tool of the community, like a bee or an ant. For a community of standardized individuals without personal originality and personal aims would be a poor community without possibilities for development. On the contrary, the aim must be the training of independently acting and thinking individuals, who, however, see in the service of the community their highest life problem.[5]

With the development of the radio, of motion pictures, and of the generally rapid interchange of ideas, we seem to have less time than our ancestors possessed for taking thought. Do we think, or do we merely repeat what we heard in the last news commentary or the last committee meeting? Where in the bustle of modern life do we find time to think? A story is told of a dear Quaker lady who was visiting a home in which the family was in a continuous bustle and haste. The father of the family was the worst offender of all. After watching his frantic and futile haste for several days, she finally put to him this question: "Man, when does thee think?" It is a fair question for our age. Yet, if we fail to train the next generation to think, what protection have we against hysteria and mob action on the one hand, or what hope for the good life on the other?

This objective calls for the ability to discern the truth amidst the welter of hearsay, gossip and propaganda. Law schools teach the law of evidence. Graduate schools teach historical method. Scientists adopt the experimental method. Why should the rules of evidence be the exclusive property of the specialists and the specialties? It has been said, "Ye shall know the truth, and the truth shall make you free," [6] but how shall we be free if we have

[5] Einstein: *Proceedings of the 72nd Convocation of The University of the State of New York*, 1937, p. 44.

[6] John 8:32.

no standards by which to find and know the truth? This objective calls not only for the ability to analyze and dissect, but the ability to synthesize and interpret. As our modern life grows more complex, we need in ever greater measure the ability to see the pattern of relationships which give it meaning and coherence.

The Archives Building in Washington, D. C. carries this legend: "The Past is Prelude." The prelude to what? The prelude to action. Knowledge of the past is desirable, but if it does not issue in wiser action in the living present, its value is esoteric. The action may occur in battle, in politics, in business, or in the reflections and writings of the scholar. Whatever form it may take, it should constitute the independent contribution of an independent mind. Again what Einstein has to say is apposite:

> On the other hand, I want to oppose the idea that the school has to teach directly that special knowledge and those accomplishments which one has to use later directly in life. The demands of life are much too manifold to let such a specialized training in school appear possible. Apart from that, it seems to me, moreover, objectionable to treat the individual like a dead tool. The school should always have as its aim that the young man leave it as a harmonious personality, not as a specialist. This in my opinion is true in a certain sense even for technical schools, whose students will devote themselves to a quite definite profession. The development of general ability for independent thinking and judgment should always be placed foremost, not the acquisition of special knowledge. If a person masters the fundamentals of his subject and has learned to think and work independently, he will surely find his way and besides will better be able to adapt himself to progress and changes than the person whose training principally consists in the acquiring of detailed knowledge.[7]

V

The final objective is the creation of an ethical attitude toward the uses to which a student may apply his knowledge and skill.

Is this an educational problem? Is it a proper objective? Is the educational process to be "ethically neutral," as the processes of physical science are, or claim to be? Can it be a matter of indifference to us whether our product be a Goebbels or an Einstein? By all the criteria, except those of ethics, Goebbels was a brilliantly educated man. Here we come full circle to a question of ends. Why educate? And to what end?

Every profession worthy of the name has its code of ethics. Indeed, it may be argued that it is not a profession until it has a code. In one sense the code will be prohibitive. No lawyer may ethically accept employment by both parties to a legal controversy except in the rare case where both parties know and desire that relationship. The reason for this is clear. It rests on more than a mere rule of law. It rests on the truism, as old as the Sermon on the Mount and as inexorable as the law of gravity, that no man can serve two masters. Similarly, doctors are forbidden to take human life, not alone because there is a statute against it, but because the rule is founded in the mores of the race and is as old as Hippocrates.

Conversely, the codes make positive demands. A lawyer who once accepts a client is bound in honor to serve him until discharged from the obligation by the client or the court, and this without respect to compensation or reward. Similarly, no doctor may abandon his patient to die, but he is bound to prolong the patient's life as long as life shall last and to do everything to restore him to health.

But codes alone are not enough. The rules of a code, like the laws of the land, may be broken or circumvented, in the spirit if not the letter. What is wanted is an ethical attitude that will fill all the gaps and interstices of the codes and will give the student something by which he may live honorably and usefully under any circumstance in which he may find himself.

We live in an age when old sanctions have broken down. For the first time in many centuries, our racial stock lives in a social environment little influenced either by traditional religion or traditional morals. We are living on our religious and moral capital accumulated in earlier ages, and no man knows whether we can survive once that capital has been consumed. It is said by competent observers that as long ago as 1918 not one

[7] Einstein: *Proceedings of the 72nd Convocation of The University of the State of New York*, 1937, p. 47.

person in five had the vaguest notion of the fundamental tenets of the Jewish and the Christian religions, and that the ratio was even lower in World War II. The Bible is a forgotten book. Nor is this all. It is said that not five per cent of students in colleges and universities take any course in philosophy, and of those who do, only a handful acquire any systematic knowledge of ethics or moral philosophy. A student who has no knowledge of ethics can hardly be blamed if he has no standard other than that of "getting by."

Now that the theologians have found that the church cannot survive as a social club, because of the obvious advantages of the country club, and have returned once more to a consideration of the nature and destiny of man, we may expect the moralists and perhaps even the laymen to give thought to the major issue of our times: Can we induce in our people a moral behavior worthy of the foremost nation of the world, a moral behavior without which our power and influence will crumble, and is crumbling, into dust?

Yet, however black the present view may be, however far we may fall short of the best to which the race has aspired, we get from the late Professor Breasted's book, *The Dawn of Conscience*, the encouraging word that, if we stand for the highest conceptions of right, of morality and of character so far apprehended by our civilization, we are on the side of the great forces of the universe. Surveying the long recorded history of man, beginning in Egypt more than 5,000 years ago, with its first faint glimmer of social consciousness and its long, and often unsuccessful, battle against the lust for power, and surveying, too, the processes of nature and the unfolding life of man, he can sum up his faith in these words: *The culmination of a developing universe is character.*[8]

If education is a foreshortening of human experience, if it is a means by which a civilization accumulates and transmits experience to succeeding generations, it must have due concern for those ethical conceptions which have come from man's age-long struggle to rise above himself and which now constitute the chief glory and heritage of the race. Nor can education afford to remain outside the great processes of our time and maintain an ethical neutrality which stands in the way of a developing universe moving to its triumphant culmination.

The great end of education, then, is the good life and the good man.

[8] Breasted, *The Dawn of Conscience*, p. 419.

Living Together Under Law

BY WILEY B. RUTLEDGE

When the travail of the Ages wrings earth's systems to and fro,
At the birth of each new Era, with a recognizing start,
Nation wildly looks at nation, standing with mute lips apart. . . .

INDEPENDENCE day this year was the first we celebrated following the victory which tested again the nation's strength to survive. 1776-1946 — two long lives would measure the span. But four times, in that short era, we have stood to lose our independence and our freedom. Each time they were saved by a hairline: first, in the War for Independence; then in the struggle of 1787-1789; again in the Civil War; and last in the second World War. The history need not be retold. Only once were statesmen equal to the grand emergency without resort to arms. Thrice freedom was gained or saved by force.

No test was greater than the last. We may not yet know how close we came to losing. Nor do we know how much of liberty we lost in saving it. War always leaves scars on freedom's body which decades alone can remove. War, as it is fought today, may leave wounds which centuries must heal.

Now we live in a strange interlude between the end of fighting and the coming of peace. It is a time of neither war nor peace. In some ways the aftermath is worse than war itself. One needs only to recall the time of the Confederation after Yorktown, of Reconstruction after Appomattox, of Grand Illusion in the Twenties after Versailles, to know that this is so. In such a time force has not given way to law, nor revenge to mercy or dispassionate judgment. Passion still rules and blood lust rides the human will without restraint of war's retaliations. Men do things they could not do in war, would not in peace.

What is equally or more important, gone is the force unifying nations in common sacrifice for common ends. Gone too is the power which, beneath the military order, makes men brethren in the fight to live. In war we forget our pettier differences. Whether skin is white, or brown, or yellow, or black matters no whit when one's life turns on what another may do. Strange is the paradox which makes men bent on killing more brotherly than when walking together in peace. Now those compelling unities have dissolved. Now the bonds tying us to other nations and other races have been loosened. Now we see slipping away the dream of what we, and they, fought to save, in pullings apart over things which in war we mastered together.

I

This is why we have no confident assurance in our victory. It is why, with passing of relief's first happy hysteria, we wonder whether peace has come or merely another armistice. It is why all around uncertainty, insecurity and fear abound. This is also reason for us more than ever to be on guard against the inevitable reaction, the let-down, the easy relapse into old comforts, among them blood-rusted ways of thinking, lest they take us back so far that we have not power to rise again to liberty.

So in war's aftermath the travail of the ages still swings earth's systems to and fro. Our own with others. What we and other men now do will tell whether we *and* they, or whether we *or* they,

will swing out of travail and onward to an inviting future or backward into chaos.

Well do we know what another war will do to us and to all men. It is democracy which is at stake. It is freedom and justice under law which hang on this hour's thread. All that the fathers fought in '76 to gain. All that they established in '89. All that Lincoln and the Civil War came on to save. All that the men of '45 snatched back from demons' hands. These precious things of liberty and independence, of the freedom of man's soul and of room for his spirit and for the institutions which guard them, to lift him above the domesticated beast, hang swaying between light and darkness.

This hour of interlude is therefore fateful. It can be twilight of democracy or dawn of freedom for the whole earth. This is the issue. And the choice is ours, more perhaps than any other nation's.

II

There is one vast difference between the choice of '76 and the choice of '46. Then each man could make or find his own freedom. Then each nation could declare its own independence, as did our fathers. The world was not hung between gigantic, unalterable, universal alternatives. If there was tyranny here, liberty could be created there. If one were born or drifted into slavery, he could find freedom over the separating seas. And it was generally conceived that there was room for all sorts of systems in the earth. Ours was to show the way for others to follow. But whether they would follow or go another road was their affair, not ours. The conditions of the time gave room for these conceptions.

All this was yesterday. Not again may we "assume, among the powers of the earth, the separate and equal station to which the laws of nature and of nature's God" may entitle us by our own independent Declaration. Nor may any other nation. Men born to the condition, though no longer the status, of slavery cannot find freedom by emigration. Men and nations live today under the domination of the institutions their machines have made and molded. The significant masses cannot escape by any flight. No nation or empire, not even the most powerful, can maintain more than a semblance of sovereignty other than by driving its people to ever greater and more terrible machines "for defense," vast mechanical vultures of the sky poised to swoop in a second down upon defenseless populations wherever their like mechanical obsessions may place them.

These are the conditions of our time, the wringers through which earth's systems now must run. They posit an unalterable and a clear alternative. There cannot be tyranny here, liberty and freedom there. There is no room for multiple and varied systems. There can be no nation towering over others with power to destroy them in a flash. Nor can there be two or three or more waiting to unleash the lightning against another when appearance of false movement may be made.

But this is one of the present alternatives, unthinkable, horrible beyond reach of all imagination. A world poised for its own destruction. Or if not that, then for subjecting all men alive and to be born to the tyranny of the one power able or lucky to survive the inevitable, world-engulfing conflagration.

That choice we cannot make. Nor can others. Man in conflict will not refrain from using any force which he thinks essential to his preservation, though using it may destroy him with his enemy. All things within man's comprehension have limits. It is so with force and its use for the settlement of human affairs. We have reached those limits. We cannot, we dare not experiment with the infinity of power which lies in one step more.

Beside this danger no other is comparable in our time — not division of the spoils of victory; not the marking of boundaries for the illusion of security; not the continued and indefinite subjugation of conquered peoples; not the creation or retention of spheres of influence; not the conflicts of capital or management and labor — none of these nor all together offer a fraction of the threat to man's decent habitation of this sphere with

which this epic issue of all time has brought him face to face.

There is but one other way. It is a world composed of nations organized for *living together under law* as men have done within nations since they emerged, law which affords each nation and its citizens freedom for full growth and development of institutions which will neither paralyze nor subdue the native human aspiration to be free, free from yokes imposed by other men and nations. This is a high, it is a mighty ideal. It is one attainable. It is a necessary choice. Necessary because there is no other except the suicide of all that for us and our forebears has made life worth the living. Necessary for others also, because without it their aspirations too must die. Of this they and their leaders must be fully as conscious as ourselves.

We live therefore under a great compulsion. Large strides have been taken to resolve the issue, larger than ever before. Still the decision hangs in the wringer of the Ages. "At the birth of this new Era, with a recognizing start, Nation wildly looks at Nation, standing with mute lips apart. . . ."

III

Justice is man's eternal quest. Liberty, his unending search. Law is the only instrument for their certain and secure attainment. These great verities are never perfectly achieved in the social life of man. After a century and a quarter of freedom in America, Edwin Markham could burst out in angry protest over the reality without the form of slavery, at sight of a bent and tortured human frame, "Is this the Thing the Lord God made and gave to have dominion over sea and land, To trace the stars and search the heavens for power. . . ?" With all our fathers' effort and our own we have but imperfectly created freedom.

But always, in increasing measure, it has been our goal. It was Lincoln who said that "With some, the word liberty may mean for each man to do as he pleases with himself and the product of his labor; while with others the same word may mean for some men to do as they please with other men and the products of other men's labor."

Lincoln's proposition was general, not particular, though he applied it immediately to the legalized ownership of one man by another. It is also evidence of our tradition's strength that the exploiter then as now clothed his exploitation in freedom's garb.

Lincoln saw through this pretense. Doing so he went straight to the heart of creating and establishing liberty, not as a word for perversion to slavery's end, but as a framework of law for a great people's living. The sheep and the wolf, he said, could not agree upon the definition of liberty. And this agreement he saw was the very core of free and independent life.

That function is never ending in a free society. For with systems as with men "where today the martyr stands, on the morrow crouches Judas with the silver in his hands." There can be no such thing as static freedom.

If then men are to have liberty, they must have institutions for its continuing definition. Justice is a beautiful abstraction. But as abstraction it can only be beautiful, not useful. If liberty and justice are to be achieved, they must be made flesh and come to dwell among us. Only as the abstraction, the principle, is made concrete in the everyday affairs of men does it take root in their lives and grow.

As I have said, law is the method by which liberty is defined and applied. Where there is no law there can be no liberty. Nor can there be justice. These three are inextricably interwoven, liberty, justice and law, trinity of mighty absolutes for democratic living.

By just so much as the law defines freedom in the wolf's terms, that is, in terms of exploitation, by that degree the law itself becomes an instrument not of freedom but of tyranny. This too Lincoln saw, and Jefferson and Jackson and Wilson and Baker and Roosevelt. In this truth lies the very essence of the legal institution as an instrument for securing democratic life. To whatever degree the law marks off the boundary of one man's freedom against another's unjustly, in the perspective of their day, to that measure it perpetuates

the slaveries of the past. Law without justice or law perverted by injustice is liberty's annihilation. This has long been true for men within nations. Now it has become true for nations themselves. The two things are inseparable for our day and after. No longer can there be a law-abiding or a free national society in a lawless international system.

IV

Here lies the difference between our task in 1946 and our fathers' task in 1776. Defining liberty has become a universal, not simply a local, continuing necessity. Today freedom's governing condition, national as well as individual, resides in the interdependence of nations, wrought by man's work in science. My liberty and yours are bounded by that fact, for it circumscribes the nation's, of which all are part.

It is idle therefore to talk of freedom at home, and of justice and liberty under law, when the nation, and other nations, are not bound to the same order. With each country a law unto itself, chip on shoulder and bomb in hand, as anarchists are wont to be, there can be no domestic or other tranquility. Without tranquility the ideal of forming a more perfect union, to secure the blessings of liberty for ourselves and our posterity, can be only a mirage.

This then, in Lowell's phrase, is a "beacon-moment" in history, a time when every man and every nation must decide or the judgment will pass by. We now know that there can be no final limit, no end to the business of creating that more perfect union toward which freedom in a democracy must ever ascend and without which it cannot live.

The obvious fact is written large for all to read. But I am not sure it has sunk deep, down to the roots of national consciousness and conscience. A people altogether alive to the moment's meaning would leave no stone unturned for pushing forward in our day, as the fathers did in theirs, the building of freedom's new framework. They would be diverted by no smaller task or thing. They would strengthen every girder in the structure as it stands. They diligently would fashion new ones for the time to come.

But times of transition ever bring discouragement. This one is no exception. But to the hour's weariness, to its fears and disappointments, to all the strains of living when nothing is secure, the architect and the builder of liberty under law cannot succumb. We do not yet know whether we have inherited or time has dissipated the strength of our fathers given to the task of freedom in '76 and '89. We now test whether, to strength for victory in battle, we too can add the genius they employed for establishing what the war was fought to defend.

My purpose has been to speak of the part which judges and courts must play. Too often their function has been to preserve the blood-rusted liberties of yesterday, the liberties of the wolf, the freedoms of men to exploit. Too often, as in Lincoln's parable, they have disguised those decisions in perverted words of liberty.

But in a democracy the judicial function, unless it is to contradict the basic premise on which the community is founded, has a vital part to play in creating and maintaining liberty, not for a caste or class or group, not for forces of exploitation, but for the freedom of all the people. Only as it measures out, within its proper sphere, an even-handed justice, blind only to special favor or influence or station, can it have part in creating liberty under law. Only thus can it contribute to forming the more perfect union the founders sought to establish.

Thomas Carlyle has said: "Venerable Justice herself began by Wild-Justice; all law is as a tamed furrow-field, slowly worked out, and rendered arable, from the waste jungle of Club-Law."

We now seek to bring out of that jungle the last, and now the most important, area of human society. As the city-state was forced to accept a more enduring freedom in the nation-state, so now the nation-state must seek it in an international community. There cannot be Club-Law among nations and Venerable Justice alone within them.

This is no time for doubting, timorous, cowardly or hopeless men. It is one for patience and determination against every discouragement. There is great work to be done, greater it may be than any previous generation has achieved. If there are reasons for discouragement, they only test our faith, our courage and our will.

Not heretofore have we failed, though we have wavered in great crises and paid for wavering a costly price in lives and in liberties too. This is a time for the spirit of '89. Those men faced great difficulties. But they did not avert their eyes, lapse into lethargy or run away. They stood to the almost hopeless task. And standing, they succeeded beyond their own or any other imagination.

I have not given you Lowell's full vision. With it I would close:

> At the birth of each new Era, with a recognizing start,
> Nation wildly looks at Nation, standing with mute lips apart,
> *And glad Truth's yet mightier man-child leaps beneath the*
> *Future's heart.*

Education for the Great Community

BY W. H. COWLEY

FIFTEEN YEARS ago at a conference at Ohio State University Newton D. Baker told of his abundant troubles getting the generals to forget their self-interest and departmental prejudices and to cooperate to win the first world war. Last year an American ambassador resigned after accusing his colleagues of sabotaging his work and the policies of the State Department. Last month, with the whole country for an audience, a member of the United States Supreme Court snarled hatefully at a colleague and revealed a feud whose existence has substantially lessened the dignity of that august body. At this moment the foreign ministers in Paris and the members of the Security Council in New York row endlessly and often maliciously about peace and the atomic bomb and thereby perpetuate the high fever of armed conflict. In a world which may soon be blown to bits by a nitrogen-chain explosion or reduced to a wasteland by a third global war — which no one wants — we quarrel as individuals and nations like ten-year-old boys fighting over marbles.

It might be possible to explain these examples of ominous bickering among men in positions of eminence by observing that the problems of society have reached such staggering complexity that of necessity all of us live on edge. But that would be an inadequate explanation. Men quarrel in good times as well as bad, and the great wrangle as flagrantly, and often as grossly, as ordinary men. Like the rest of us, they bullyrag and browbeat one another because their purposes clash and because, deficient in the arts of human relations, their good will wears thin. Individuals, families, neighbors, communities, and nations follow the same pattern of conflicting purposes, insufficient social skill, and then blow-up. Up until now society has been able to afford the luxury of discord, but the supersonic Atomic Age has produced weapons which threaten the destruction of civilization, if not of the planet, unless men learn to live in harmony. Every commencement speaker, editor, and columnist has been saying this so endlessly that it has become a commonplace along with the companion observation that the destiny of the world depends upon education — upon the outcome of the race, as H. G. Wells expressed it in 1920, between education and catastrophe. Only by education, so the common conclusion runs, can the world avert barbarism if not annihilation.

This judgment elevates educators to a lofty station contrasting startlingly with the lowliness of their historic and current position in society. Men of learning have always been honored, but as a class the teachers of the world's youth have never been particularly respected. In the ancient world slaves taught the oncoming generations, and today teachers — and often professors — usually earn less in money, if not in status, than barbers and plumbers. Certainly they rank lower in income and social position than bankers and politicians. Yet almost everyone agrees that in the hands of these neglected men and women lies the destiny of society.

Clearly they are not equal to the task. For one thing, they know no more about the arts of human relations than generals and judges and diplomats. Nor do they have a particularly auspicious record

for cooperation and goodwill. On the contrary, by an old German definition a professor is a man who differs, and more often than not he differs with sarcasm and rancor. In several significant publications about general education we have recently had some not-unusual illustrations of professional bad-blood. An educational philosopher, known from coast to coast, reviewed the Harvard Report, *General Education in A Free Society*, in the January issue of the *Journal of Higher Education*. He did not like some parts of it and peppered his review with such phrases as "a pious incantation" and "fast and loose" thinking, and he queried whether or not the Committee had "its own special line of communication with the Absolute." To these observations another professional philosopher took sharp exception, and he responded with one of the bitterest replies to a review that I have ever read. He used such words and phrases as "muddleheaded" and "fatuous complacency," and he remarked that the reviewer had "Achilles' heels on both feet." Those who have been associated with the reviewer, as I have, know that regardless of his heels, he has very sharp toes and an accurate sense of placement, and so he kicked back with skillful precision of aim. He ended his reply to the reply with a reference to Mount Olympus and with a blast about his opponent's failure to ". . . regard the requirements of common courtesy."

Among school people the most discussed book of this present period also has to do with general education: *Education for All American Youth* issued two years ago by the Educational Policies Commission. In some quarters, this too has been received with vitriol. A distinguished emeritus Professor of Education of one of our leading universities has cut into it ruthlessly and has described it as "a Walt Disney type of treatise on education" which "as intellectual or any other kind of honesty — is a pitiable exhibit" showing "how completely both the moral and the intellectual standards of the master profession have crumbled during the past few years." This same professor emeritus did not like the Harvard Report either. He polished that off by dubbing it an "incredible . . . flowering of tradition."

If educators hold the key to the future of the race, clearly they — along with everyone else — have a rather considerable way to go in learning about how to get on with one another amicably before they attempt to teach the youth of the world how to avoid wars. Yet learn we must; and since everyone has a stake in the results, anyone may suggest how the learning should proceed.

II

When people assert that education must fend the disasters which face the world, they obviously do not mean education which will produce better bakers, businessmen, carpenters, mechanics, lawyers, and physicians *as such*. Rather, they mean education which will give society better men and better women *regardless of their occupations*. In brief, they mean *general* and not vocational education. Shelving the involved and heated but mechanical question of whether or not general and vocational education should be kept separate or should be combined, the core of the problem resides in the education of youth as *people* rather than merely as workers. Workers we all must be, and education must provide the training; but we are men and women first, and education must start and end with this often-neglected fact as its pole star. This means that the affirmation that we are running a race between education and catastrophe must be amended to read that we are engaged in a race between *general* education and catastrophe.

But what is general education? Here we halt and argue, and probably this will always be so. Only by discussion — in good will if possible — can bits of common agreement be achieved. Many men must offer their ideas, inadequate though they be, with the hope that from myriad theories a collective judgment may emerge. To this potpourri I should like to contribute the suggestion that general education has to do with developing and moulding that which philosophers used to call the Soul and which they now call the Self, that

essence which distinguishes each individual from every other individual but which, at the same time, constitutes the unit of all associations of individuals.

Obviously this definition of general education requires agreement about the nature of the Self and implies that without such agreement little educational improvement can be expected. What then is the Self? Half a century ago no one could attempt to explore this question without honestly observing that religious and philosophical schools of thought had arrived at no common ground. In his celebrated chapter in his *Principles of Psychology* on "The Consciousness of Self," published in 1890, William James described the three paramount historical concepts of the Self: substantialism, associationalism, and transcendentalism. He proceeded to show the limitations of each of them and to espouse a fourth point of view. A decade later his friend and Harvard colleague but philosophical opponent, Josiah Royce, undertook much the same endeavor in his Gifford lectures delivered at the University of Aberdeen. These two incisive explorations of the concept of the Self stirred up animated and widespread discussion which led to a greater measure of agreement about the Self than philosophers had had since the Middle Ages when theology completely controlled philosophy. Because of this growing commonality of view, it is possible today to discuss the Self on at least one patch of terrain which several leading philosophical schools hold in joint possession. This common ground as yet has no name, but it can be described in a brief sentence reading: the essence of the Self is motive or purpose.

These are my words, but in support of them I quote representatives of three leading philosophical schools; a realist, a pragmatist, and an idealist. Says the realist in the person of the late Professor Frederick J. E. Woodbridge of Columbia University:

> We ought to stop talking about what is consciousness and what is behavior and what is sentiment and what is emotion and what is sensation and what is idea and all this, that and the other thing, and tackle these more obvious things: what do people want? How do they go about getting it? How effective is their way of getting it? I confess it all seems to me as simple as that.

Says the pragmatist in the person of John Dewey:

> "Motive" is the name for the end in its active or dynamic capacity. . . . Effort is significant not as *bare* effort, but in connection with carrying forward an activity to its fulfillment: it all depends . . . upon the end.
>
> The essence of self is the self-determining activity of will.

Says the idealist in the person of Josiah Royce:

> I cannot answer the question, "Who am I?" except in terms of some sort of statement of the plans and purposes of my life. In responding to the question, "Who are you?" a man may first mention his name. But his name is a mere tag. He then often goes on to tell where he lives, and where he comes from. His home and his birthplace, however, are already what one may call purposeful aspects of his personality. For dwelling-place, country, birthplace, and similar incidental facts about a man tend to throw light upon his personality mainly because they are of importance for a further knowledge of his social relations, and so of his social uses and activities.
>
> But the answer to the question, "Who are you?" really begins in earnest when a man mentions his calling, and so actually sets out upon the definition of his purposes and of the way in which these purposes get expressed in his life. And when a man goes on to say, "I am the doer of these and these deeds, the friend of these friends, the enemy of these opposing purposes, the member of this family, the one whose ideals are such and such, and are so and so expressed in my life," the man expresses to you at length whatever is most expressible and worth knowing in answer to the question, "Who are you?"

Since the synthesis of the Middle Ages disappeared under the impact of the Reformation and of science, few philosophers have agreed about the Self. These three statements make it clear, however, that in recent decades a large measure of agreement has been achieved. Concerning the eternal destiny of the Self, or the Soul, differences of opinion of course still abound; but concerning the essential, this-wordly nature of the Self realists, pragmatists, and idealists — supported by the findings of biologists, psychologists, and psychiatrists — agree in declaring the Self to be motive, purpose.

III

With this definition as a base of operations, it is now possible to attack directly the problem of the education of the Self. If a Self is a complex of purposes, then manifestly the education of the Self has something to do with helping the Self to realize and also to socialize its purposes. But what are the purposes of the Self? The answer must obviously be "manifold," and psychologists and sociologists have made impressive lists of them and of those held in common by everyone. It would be profitable to appraise these lists, but in a discussion of general education it would probably be more in point to discuss the purposes of students and especially the four which appear to dominate the lives of college students in their struggle for self-realization and social maturity. These four purposes seem to be: first, to act physically; second, to act gregariously; third, to act vocationally; and fourth, to act ideally, that is, under the direction of a self-imposed ideal be it ethically high or low, unselfish or selfish. Students have other common purposes besides these four, of course, but these seem to me to be the most common and therefore in need of especial emphasis. Moreover, controversies center about each of them; and if educational institutions are to help and not to hinder students in their striving for self-realization, educators must recognize not only their urgency but also their complexity.

Consider the first of these four common purposes of students: to act physically. To live is to function physically. To live is to act. From the first squawks of a new-born baby to the last breath of a dying man, life is action. Every animal knows this by nature, and the college student knows it beyond the shadow of a doubt. Professors, however, often do not know it, and the history of our colleges is spattered with records of the clash between professors who have wanted students to be good minds and students who have first insisted upon being good animals.

Today athletics somewhat obscure this deep difference between students and so many of their teachers, but beneath the surface it still persists. A century ago the colleges refused to allow students even to throw or kick a ball without fear of penalty, and the students responded to the ban by dynamiting the college buildings as they did at Princeton, by throwing red-hot coals into their professors' windows as they did at Yale, by blowing tin horns endlessly night after night around the homes of unpopular faculty members as they did at Dartmouth. Athletics have channeled their animal spirits, but the conflict still continues in subterranean ducts and crevices. Students demand self-realization in animal action; and though professors may accept the inevitable, many deplore the necessity and consider their charges to be unregenerate barbarians.

It is not my purpose to discuss and to defend athletics but rather to point to the age-old feud between those who insist that education must accept and mould student demand for animal action and those who assert that educational institutions must limit themselves to the training of the intellect. The latter group, the intellectualists, believe fervently that intellectual effort in the "disinterested search for truth" is the chief end of colleges and universities if not of life itself. They hold this conviction with such ardor that they have little if any interest in the demand of students to be good animals or in the efforts of educational institutions to prepare students for operating society here and now. Thus they deplore not only everything that relates to bodily action but also everything that has to do with the non-speculative, non-exploratory functions of educational institutions.

To discuss the disinterested pursuit of truth may seem to be out of place in an appraisal of the student's demand for self-realization through athletics and comparable forms of physical action, but its relevancy seems to be clear. The problem of physical self-realization in colleges has been entangled with the aversion of intellectualists for *any* kind of physical action. The aversion has its roots in the disdain of the Greeks for manual labor (since slaves alone were meant for such work) and in the

hatred of the body which characterized the patristic and medieval worlds. The Greeks honored athletics and dancing and made them central in their education, but until recently the Christian world has neglected and abhorred all forms of bodily action, sometimes even those essential to maintaining life.

The Greek disdain of the physical action involved in manual labor and the abhorrence of ascetic Christians for physical beauty and activity have joined to set up a controversy between the mind and the body which continues powerfully to this day. Universities idealize the life of the mind, of contemplation, and they sneer at the student's demand for self-realization through action be it physical action or, indeed, any sort of action. In *Faust* Goethe has dramatically described the theme of the still-persisting controversy:

'Tis written: "In the beginning was the Word!"
Here now I'm balked. Who'll put me in accord?
It is impossible, the *Word* so high to prize,
I must translate it otherwise
If I am rightly by the Spirit taught.
'Tis written: In the beginning was the Thought!
Consider well that line, the first to see,
That your pen may not write too hastily!
Is it then Thought that works, creative, hour by hour?
Thus should it stand: In the beginning was the Power.
Yet even while I write this word, I falter,
For something warns me, this too I shall alter.
The Spirit's helping me! I see now what I need
And write assured: in the beginning was the *Deed*!

Those who exalt the Word and frown upon the Deed (be it athletic, social, or vocational) believe, and properly, that the highest purpose of man is to understand the world and the laws which govern it. They overlook, however, two tenacious facts: first, that college students are living through a period during which bodily energies are greater and more demanding than ever in their lives; and second, that by both choice and necessity the great majority of people from youth to old age give their energies chiefly to making a living and to maintaining civilization as they find it. Thus for the great majority of people neither as youth nor as adults can the Word take precedence over the Deed.

The fantastic achievements of pure scientists and disinterested scholars have convinced almost everyone of the infinite importance of the Word, that is, of spreading the boundaries of knowledge. Research and scholarship need more attention and support rather than less, but the intellectualists would make such pioneering work the chief if not the sole function of colleges and universities. Worse than that, because they dominate the universities which train school and college teachers, the intellectualists control and distort the education of youth. They have done this for centuries, and thus they interfere with the proper education of the 99.99 per cent of the population who cannot and will not be professional or even amateur truth seekers.

The fact is that never in history has society been able to afford to release more than a very small fraction of any one generation from the services of maintaining society to pioneering for new frontiers. Never since ancient times, moreover, has society been willing to permit many men of learning to concentrate upon truth-seeking alone. It has insisted that they must also teach students to be successful human beings equipped to operate the world today and tomorrow. To live is to act, and most of the adolescents who make up the student bodies of our colleges and universities demand physical action for its own joyful sake. Until professors know this in their deepest selves and, at the same time, comprehend the historic causes of their apathy or antagonism to physical expression, they will never be able to help students to direct, sublimate, or idealize their physical drives.

IV

But obviously physical action cannot be acceptable as a major function of general education. It has its place, but that place must be kept secondary. Few will deny that for many students athletics and dancing and other animal expressions have been the *raison d'etre* of the college. We needed the protest of critics within and without the colleges even though many of them misjudged the issues involved. Most of those who have struggled

with the problems of student life know now that President Wilson's oft-cited circus simile has been wrongly stressed. Of course the big tent of intellectual activity must be the main show, but no college is complete without its vigorous student life any more than a circus is complete without side-shows. The nature of the side-shows should and can be improved, but for the normal youth they cannot be eliminated.

This is true, it seems to me, because students want more than physical activity. They want social activity. They seek self-realization by living and playing and working with their fellows, by gauging their powers in competition with their peers, by growing under the glow of college life and college friendships. The man who has seen this most poignantly and expressed it most imaginatively seems to me to be Henry Seidel Canby, the former editor of the *Saturday Review of Literature*. In his fascinating book *Alma Mater*, published a decade ago, he wrote two paragraphs worthy of frequent quotation:

> Why did they go to college, those thousands upon mounting thousands? . . . They came for the best of reasons. They swarmed from the drab experience of a small town or a commercial city — because they had heard of college life, where instead of the monotony of school discipline or the bourgeois experience which had succeeded their confident childhood, there was singing, cheering, drinking, and the keenest competition for honor and prestige, a life rich in the motives which were being stifled in the struggle for power in the adult world outside. They desired romance, they sought distinction, and were not unwilling to spend some bookish labor in order to win the opportunities of a class that called itself educated. . . .
>
> From a commonplace family in a commonplace town, with no prospects ahead but a grind of money-making and association with other stuffy nobodies, the youngsters . . . might hope to pass by his own native abilities into the brave translunary world of great cities and the gilded corridors of their privileged sets. . . . Henceforth he would not be Jones of Columbus, but Jones of "Bones" or some other tightly-ringed fraternity. Thanks to his ability to catch a ball, or to organize, or to be friendly, or to drink like a gentleman, or even to capitalize his charm, he was tapped of the elect at the age of 20 or 21, and had precisely that advantage . . . which rank and privilege still gave in the Old World. . . . All this we could win, unaided by the power of money or the accident of social position.

Many professors have forgotten the animation and romance, the self-enlargement and self-realization which gregarious student life has meant for most students. To the colleges in this century have come vast hordes of students seeking invigorating companionship with their fellows but also hoping for stirring and expanding intellectual adventures. Most of them have honestly wanted to cultivate their logical powers and to extend their ranges of understanding, but they have found little help from most faculty members. Professors have expected them to arrive as freshmen full-grown like Athena and panting to drink from the Pierian spring; but when they found them immature and awkward and often in need of learning the most elementary approaches to the intellectual life, they denounced the secondary schools and pronounced most of their graduates to be too stupid to waste their time on anyway.

Meeting such disdain if not condemnation, students returned like for like and frequently appraised their professors and all their ways with something less than enthusiasm. They judged the faculty's interest in "scholarship" to be largely fusty pedantry, their subject matter to be chiefly pickled abracadabra, and their professors themselves to be cloistered book-readers or mildewed laboratory grubbers, men who had chosen the academic life because of the foreknowledge that they could not succeed in business or the active professions. As freshmen they entered college starry-eyed and impressionable, bursting with zest for living, ripe for rich, loyalty-commanding experiences; but few of their instructors had the gift of making the intellectual life vibrant and appealing. Thus as naturally as a healthy child rejects tasteless food, they pulled their energies away from the cold, forbidding curriculum to the throbbing, thrilling extra-curriculum.

In Mr. Canby's words "the faculty had one of the greatest opportunities of all time and muffed it." Why did they muff it? Why do they (or we) continue to muff it? The reasons are many, but the central reason seems to be this: faculty members have not been interested in the kinds of

self-realization which youth demand. They have stressed the Word, knowledge, abstract intelligence; and they have ignored the student's need of animated teaching to lift him out of his provincialism and barbarism to informed and sensitized thinking and living. Most of the teeming crop of students came — and still come — from homes in which books and ideas have never been valued, and to help them climb from such drab circumstances to cultivated interests and preceptions requires patience and sympathy and devotion which only the rare professor is willing to expend — if, indeed, he himself possesses cultivated interests and sympathies. The great majority of professors have their scientific experiments to complete, their journal articles to produce, their textbooks to finish. They have no time for students.

It is not possible here to explore the causes of the scandalously poor teaching which drives students into excessive or undesirable gregariousness. Enough to point out what every faculty member knows: on most college campuses, teaching is neither honored nor rewarded. The plaudets and salaries and ranks go to men who excel in research — or who at least publish books and articles. The blame, therefore, does not fall chiefly upon the professor but rather upon the system, upon the organizational structure of our higher education. It must be rebuilt from top to bottom before undergraduate students will get the time, attention, and understanding which they deserve and which they must have if they are not to continue to seek their self-realization in the lower forms of student life, in the standards of philistinism, and in selfish ideals.

Only when such a reorganization has been consummated will it be possible for the colleges to provide students with opportunities for the wider-ranging, more valuable kinds of social self-realization which basically they seek. "A great soul will be strong to live as well as strong to think," wrote Emerson, and students will not in general honor the intellectual goals of the faculty until professors honor the human relations goals of students. Undergraduates cannot be whittled down to fit the dehumanized ideals of the intellectualists who assert that the college is nothing more than a place of the mind. Just so long as we continue to think that they can, the attempt to develop sound programs of general education will keep on falling and sprawling between the stool of the curriculum and the stool of extra-curriculum.

V

Mr. Canby in his intuitive analysis of why students have flocked to the colleges has, of course, told only part of the story. He has written chiefly about Yale and comparable colleges, colleges whose students come, by and large, from the upper economic classes and who enter managerial careers and the old-line professions. He has never, I imagine, dealt with the kinds of students who, under the spur of economic necessity, attend the vocational colleges bent upon specific occupational training. In their demand for physical and social self-realization these students do not differ from their more privileged fellows who attend colleges like Yale, but they do differ in their economic compulsions and therefore in their educational plans and in their patterns of self-realization. They attend college to prepare for careers, and they have little time for what most of them — and many of their professors — consider to be the unnecessary frills of advanced general education. They see their main chances for over-all self-realization in employment which after graduation will produce the financial wherewithal to marry and to raise a family on a higher plane than, in general, their parents enjoyed.

To ignore or belittle this driving economic motivation of students — as many liberal-arts educators do — seems to me to show ignorance of the social forces which determine the character of our national life. In my judgment it is folly to denounce, rather than to try to understand, the materialism which has unmistakably but also *necessarily* pervaded the United States. I say necessarily because during the 19th century we expanded from a narrow strip of territory on the east coast over the largest area ever opened up and

developed in such a brief period. We built railroads and highways, factories and skyscrapers, ships and vehicles on a scale never known in history. We dug mines, cultivated farms, and established homes in an abundance beyond the most fanciful dreams of the founding fathers. We laid the foundations for a common culture through a single national language. We entered upon the most ambitious and humane program for improving the lot of the common man ever attempted by any peoples, and to ensure its continuance we established democratic political institutions, a free press, and free schools. We organized and erected churches, hospitals, art galleries, and universities. We grew from a total of 5 million people in 1800 to about 76 million in 1900, and we made work for these teeming multitudes, most of whom sought our shores from Europe and all of whom were the descendants of such immigrants who had to be assimilated into our pioneer and therefore largely uncouth culture.

In carrying forward this phenomenal enterprise and, at the same time, in setting up the highest standard of living of all time, of course materialism dominated. It could not have been otherwise. Alexis de Tocqueville, the French scholar and statesman who wrote a famous book about the United States a century ago discerned this clearly. He observed that the nation could not and would not develop its potentials — spiritual as well as physical — without the compulsion of materialism. "To clear, to till, and to transform the most uninhabited continent which is his domain," he wrote, "the American requires the daily support of an energetic passion; that passion can only be the love of wealth. . . ." In short, the nation needed the materialistic philosophy which came to control it, and it also needed an educational program which would produce very much the kind of men it did produce: single-minded young go-getters intent upon seeking self-realization in the adventure of making a place for themselves in the world and, if possible, a fortune.

Never before anywhere had there been such a gigantic developmental opportunity, and never before anywhere had it been possible for the common man to garner in some of the resulting wealth and improve social status. The simultaneous maturation of technological power, of methods of raising and employing capital, and of political democracy inescapably made us a nation of materialists. Opportunities hung on trees like ripe fruit, there for the picking, and it is inconceivable that most Americans could have been interested in anything more urgent than picking it.

It is inconceivable, too, that the educational system of the country could have been unaffected. The old-line academies and colleges proved inadequate from almost every point of view. As the records of the first five or six decades of national history make abundantly clear, they had served the country brilliantly, but they were not equal to the demands of the new times. New kinds of schools and colleges therefore had to be established to meet the needs of the swelling numbers of students who clamored for the training they needed to participate in the national expansion and who naturally sought shares in the undertaking and in its rewards.

But in the process of this inevitable reorganization of education a massive rift developed, particularly in higher education. Almost all the colleges in existence before the passage of the Land-Grant College Act of 1862 stubbornly resisted the new era aborning. Following the spirit of Plato and Aristotle, of Erasmus and Sir Thomas More, they scoffed at the industrial and commercial careers for which ever-increasing proportions of their students sought training, and they refused to reconstruct their educational programs. In effect, these defenders of the Word said "Study Greek and Latin or go elsewhere. Our colleges shall remain undefiled by your horrible machine age." Of course the new age pushed on despite them. Because they refused to attempt to comprehend it and to help it meet its problems, it encircled them and slowly infiltrated their colleges with a vocationalism which could have been tempered had they not been too aloof to negotiate with it. Refusing to admit the training for the new occupations to a place in

the educational sun, they came in a few decades to see their own educational arrangements inundated by sheer force. Chancellor Samuel P. Capen of the University of Buffalo has described the dramatic results of their shortsightedness:

> The tables have been neatly and completely turned. Look now at the great university organizations of the country, and what do you see? Engineering, agriculture, forestry, commerce, home economics, the great health services — these hold the front stage. They absorb the major part of appropriations. They carry the institutions' reputation. Indeed, the distinctive contributions of America to higher education, the contributions that are recognized throughout the world, have been made in this once despised field of technological education.

This review of the rise of American materialism and of the resulting war between vocational and general education may appear to be irrelevant to the topic of student self-realization, but it is essential to an understanding of what seems to be the most portentous question of self-realization upon the horizon of American college students — which is this: can students achieve self-realization during the years immediately ahead in the same materialistic terms which satisfied their grandfathers and their fathers? Can they be sound human beings in an age whose most pressing needs are political and moral and not economic? Expressed differently, can they serve themselves and their times effectively without a richer general education than they now generally seek or than most colleges — liberal arts as well as vocational — now provide?

Because of the inevitable materialism of American life during the past century and because of the rift between vocational and general education, vocationalism today rides in the driver's seat. Thus most college students take courses which predominantly emphasize occupational efficiency and financial success and which give little if any attention to the student's need for depth of understanding of the world at large and even less attention to his moral responsibilities thereto. We have been catapulted into the Atomic Age, and it seems clear that American youth of today cannot possibly hope for self-realization as adults tomorrow if they prepare in their college years chiefly to become efficient workers and economic successes but not also informed, public spirited citizens and wide-ranging, sensitized human beings. In short, the materialistic motives which have very properly controlled the country and the colleges during the historic epoch now ending will not suffice for the new epoch which we are now entering. To permit them to continue supreme is to deny to our students the possibility of adequate self-realization as Atomic Age adults.

VI

Statements such as these are not being welcomed by vocational educators and by those who see the pressing need for the further extension of occupational training. They see the tremendous need for more and better career training, and they fight to retain the territory they have so arduously won against such stubborn opposition. Nor are they of a mind to forget the holier-than-thou attitudes of those who have presented the claims of liberal or general education. Yet the fact seems to be that today the weight of evidence supports those who sponsor the thesis that general education, more intelligently conceived, must have the right of way. This does not mean that vocational education need be restricted or in any way under-privileged. Rather it means that a plan must be evolved which will bring vocational and general education into balanced harmony with one another and with the needs of a society suffering from atomic and political jitters.

If vocational educators — who, as Chancellor Capen has pointed out, now have the greater power — prevent the accomplishment of this imperative reformation, they will have changed places with the reactionary liberal educators of the era now coming to a close, and *they* will be the reactionaries of today. They must decide by their actions the verdict which Time will eventually put upon them.

In pondering the fateful problem which they face, vocational educators should remember that it is easy for us all to continue in the paths of re-

forming pioneers and to consider ourselves their spiritual kin when, in fact, we have imperceptibly joined the forces of those who defend the status quo. Similarly it is easy to assess blame after an event and to imply that if we had been actors in the historic drama under review we would surely have acted more intelligently than those on the losing side. Few ever imagine themselves in the roles of those who proved to be wrong. Instead, we identify ourselves imaginatively with George Washington and not with George the Third, with Abraham Lincoln and not with Jefferson Davis, with Woodrow Wilson and not with Henry Cabot Lodge.

Similarly in appraising the history of the struggle for vocational education against the bitter antagonism of the academic Old Guard, we associate ourselves with such great leaders of change as Horace Mann and Charles W. Eliot and imagine that had we been their contemporaries we would surely have been their adherents. But if these men were alive today, where would they stand on the issues for which they fought? I, for one, cannot but believe that they would be the leading advocates of an education which would be equal to the insistent, the crying, need of today's distraught world.

Mann and Eliot and their associates who fought for the admission of vocational education into the schools and colleges of the country correctly assessed the problems of the mid-nineteenth century. In our turn we must correctly assess the problems of the mid-twentieth century. With the aid of recorded history we now recognize that the most urgent educational need of their period was for expanded facilities for vocational training. With the aid of history and with knowledge of the staggering events of the present, we must also recognize that the imperative need of today is for a better general education.

But we must not fall into the easy fallacy of setting up an either-or choice between vocational and general education. That has been our error in the past. Everyone recognizes that students must have both, but we fly at one another's throats over the questions of the amount of general education that students should have and its timing. No easy solutions have been found for these problems, and they grow more complex each passing year. Vocational and general educators must therefore join forces for a common attack upon them. This requires that they sit down in good will and sympathy seeking to understand one another's points of view and to evolve plans of action which recognize the appalling possibilities of permitting the current educational lag to continue in an age of machines which travel faster than sound and of pellets of the same substance as the sun.

Clearly we must honor both vocational and general education, but we do not honor them both equally now. Vocational education has the priority. Without neglecting national economic sufficiency or personal occupational efficiency, we must restore general education to parity. To achieve parity we must, during the immediate present, give general education the greater accent. "Mankind's destiny is being decided today, now, this moment," wrote Albert Einstein on May 23rd, and who is there who will assert that vocational education can contribute the decisive elements toward that decision? These elements must be supplied by general education. When a stockbroker declares (as a nationally known broker did recently) that "the main hope of peace lies in education," he does not mean education in corporate finance. When an editor writes "it is literally education or extinction," he does not mean more, or even better, courses in the techniques of journalism. When a manufacturer asserts that we must depend upon education "if our republic is to survive," he does not mean improved instruction in engineering or accounting or salesmanship. These men all mean general education.

But by general education they do not mean "cultural education" or "the genteel tradition" or "the liberal disciplines" or "the education of gentlemen and scholars" or any of the old clichés. These phrases once had vitality and validity, but today they mark the tombstones of dead concepts and withered issues. It profits nothing to try to re-

call them from their graves. We need new insights about general education and new slogans to describe and further it. One of these descriptive slogans seems to me to be at hand in the neglected writings of one of the three philosophers whom I have earlier quoted: Josiah Royce. The phrase is "education for the Great Community."

VII

College students seek more than physical, social, and vocational self-realization. They also seek self-realization through self-imposed ideals. They desire fervently, if also silently, to discover what William James called a "central principle" for their lives and what Josiah Royce called loyalty to a cause which "unifies many lives in one." In every age countless causes, some lofty and some selfish, unify men; but in every age a few dominant causes or idealized plans of life dominate the thoughts and actions of those in positions of strategic power and of those whom Jefferson described as "the natural aristocracy of talent and virtue." The conflict of these causes constitutes the history of the race, but the Atomic Age differs from all its predecessors in that we know through our senses and not through revelation that the end of the world is actually at hand unless we achieve a plan of action in which the common good of society transcends personal, national, and coalitional purposes. In short, we know that we must build the Great Community or have none.

The task of general education thus stands out starkly. We must educate for membership in the Great Community. This means that every individual, and especially the gifted who populate our colleges, must feel as well as understand the cataclysmic nature of today's crisis. It means that every alumnus must see his necessarily specialized job in relationship to that crisis. It means straight thinking, the ability to communicate with one's fellows, and especially skill in human relations. It means that education must be moral as well as intellectual. It means that education must associate students with the past, the present, and the future. Above all it means that education must lift students out of a narrow and selfish what's-in-it-for-me conception of self-realization to a devotion to the Great Community.

Despite their apparent demand for vocational training as we currently understand it, students in the depths of their potential larger selves crave membership in the Great Community. They know that economic aims are not the final end of life. They see their world see-sawing on the brink of destruction, and they would add their weight and their strength to prevent it from falling into the threatening chasm. They hunger for instructions about what to do and how to do it. They seek not only vocational training but even more urgently they seek vocational direction in the medieval sense of being called to service in a great cause.

The complex problems of educational mechanics involved in reorganizing general education so that students may be helped to become their larger selves cannot be discussed here. Again and again lofty purposes bog down because of inadequate mechanisms, and one cannot escape from the truth of John Dewey's observation that to be interested in ends and to neglect the means for their atttainment equals sentimentalism. But important though mechanisms be, even more important is the spirit which lubricates them and which dominates the teachers who operate them. College teachers must therefore return to the neglected purpose of teaching *both* knowledge and students. They must once again give allegiance to the doctrine of Ruskin that the able teacher is he who teaches not knowledge alone but who teaches students to behave more ethically as well as more rationally.

Nothing but such teaching can call students to their larger selves and to membership in the Great Commmunity. Every college student must be able to say with Matthew Arnold:

> For eager teachers seized my youth,
> Pruned my faith and trimmed my fire,
> Showed me the high, white star of truth,
> There bade me gaze, and there aspire.

It is no longer popular to suggest that college teachers should inspire their students to aspire. Yet educators can be equal to the fateful task with

which society now entrusts them only by being loyal themselves to the Great Community and by stirring their students to share it with them. Delve into the intimate history of almost any great man and of almost any civic-minded citizen and you will find at least one inspiring teacher who has helped arouse him to such loyalty. Only when college teachers return to the ancient ideal of inspiring teaching can they hope to improve the self-realization ideals of their students and to help them synthesize the contradictory claims of physical, social, and vocational purposes and of selfishness and unselfishness. The agency of this synthesis must be good teaching, the end must be the ideal of the Great Community. Professor Royce saw this clearly when he wrote:

> Be an individual; seek your own individual good; seek that good thoroughly, unswervingly, unsparingly, with all your heart and soul. But I persist in asking: Where in heaven above and in earth beneath have you to look for this your highest good? Where can you find it?

In the Great Community he answered. "Be loyal to the Great Community." In such loyalty alone can one find satisfying self-realization and ethical avenues for the purposes of the larger self. In such loyalty alone can we keep in check our quarrelsome lesser selves and save our tottering civilization. To summons the youth of the world to loyalty to the Great Community must be, now as never before, the heart of general education.

Liberal Education in the Military Forces

(A SYMPOSIUM)

BY DWIGHT D. EISENHOWER

EDUCATIONAL institutions carry a tremendous responsibility in the world today. Only the victory of knowledge, logic, and understanding over the forces of ignorance, irrationality, and prejudice can banish war from our globe. We in the United States have recognized this fact for many years. Education and democracy have become integrally associated. In this democracy we have developed a basic hatred of war and a deep conviction that force can never replace justice in the adjustment of wrong. In defense of these beliefs we have fought the recent war. The spread of these beliefs over the world holds our hope for the future. Only by constantly raising the educational level and the moral conceptions of all the people everywhere can we expect to achieve that mutual understanding and tolerance among nations which alone can guarantee peace.

This task will not be accomplished overnight. We have ahead of us a long road. We will encounter difficulties, possibly setbacks. But on the final goal the vast majority of Americans are agreed. They have put their faith in education and in the eternal value of moral strength. The outcome will be determined in the final analysis by the ability of teachers in colleges and universities, in grade schools and high schools, to discharge their mission.

Despite a common notion to the contrary, teachers and soldiers are working for the same ideal. Both are hoping that out of the suffering and sacrifice of the last war will come a world ruled by law. Both are striving to achieve national security. The soldier's task is an immediate one; he must provide the military force to guarantee the national security in an interim world which is only slowly building a structure of peace. The teacher's task is to disseminate a knowledge of the issues at stake, to create a feeling of the responsibility each citizen must bear for the accomplishment of the common task. Success in this enterprise will depend to a large extent on the development of mutual understanding between soldiers and teachers. Ignorance of the function and aims of each profession will inevitably lead to a repetition of the mistakes we have made in the past.

No one could emerge from the experience of the last war without a most profound respect for the contribution to victory made by men trained in the liberal arts. The work of natural scientists in the development of new equipment is known to everyone. Less well-known, but of great importance have been the contributions of other arts and sciences. Teachers all over the country taught our soldiers special techniques. Language instructors devised new methods in the teaching of foreign tongues. Specialists in the culture and history of distant countries furnished valuable intelligence data. Historians compiled the record of the war so that the lessons learned would not be forgotten. Economists estimated allied and enemy capabilities. Political scientists and sociologists brought invaluable training to military government.

Psychologists aided in the difficult task of classification and assignment of personnel. Few were

the responsibilities of the Army in which men trained in the humanities did not assist.

This lesson must be perpetuated. The security of the nation during the interim period requires not only a large reservoir of well-trained men in the arts and sciences, but also an awareness among soldiers that in modern war success depends on the proper integration of all the resources of the nation. The value of a good soldier is increased many fold if he possesses, in addition to his knowledge of military matters, competency in one or more of the humanities and thinks about the contributions these subjects can make to the defense of his country. The value of a civilian trained in the humanities is equally enhanced, if he considers the role his specialty can play in the achievement of national security. The arts and sciences as well as weapons, manpower, and industrial capacity are national assets essential to security.

In the long run, however, the indirect benefits of a liberal education will probably be even more important than special skills. Mere knowledge does not make a good citizen. Medical and engineering schools have recognized that graduates attain greater competence in their profession if they have acquired by a general education the ability to make independent judgments and an understanding of their responsibility to society. The Army too accepts the validity of this policy and encourages its officers and enlisted men to increase the breadth of their knowledge. It knows that an education in the liberal arts will make its personnel better and more intelligent citizens, increase their ability to think for themselves, and develop their awareness of the wider social implications of their profession. It is primarily through a spread of responsible thinking among people of all walks of life that the devastation and suffering of another war can be avoided.

We realize that we stand in danger of being engulfed by our technological progress. This threat must and can be avoided. We must remember that men, not machines, make war. Only a sound general education can provide the judgment, understanding and moral sense that are the best safeguards of the future. Students in the arts and sciences pass their final examination not in college, but after graduation by the use to which they put their training. This is the ultimate test of the success with which teachers have carried out their mission.

The peace of the world and the security of the nation rest on the devotion with which all citizens are willing to work together intelligently to that end.

BY CHESTER W. NIMITZ

It is by no means enough that an officer of the Navy should be a capable mariner. He must be that, of course, but also a great deal more. He should be as well a gentleman of liberal education, refined manners, punctilious courtesy, and the nicest sense of personal honour.

JOHN PAUL JONES, 1777

DURING THE war years, the Navy was subjected to considerable criticism from various quarters, for insisting that the majority of its reserve officers be drawn from the ranks of college-trained men. Some people questioned the advisability of allowing potential officers in the V-12 training program, the apparent indulgence of two years' work in liberal arts colleges, in the face of the pressing demands of war.

"We need men who can command ships and guns," the Navy was told, "— not scholars."

Actually, the exigencies of war forced us to reduce the number of liberal subjects in the training curriculum to what we considered an absolute minimum. But the Navy has learned over a period of years that the successful officer is more than a technician. To be sure, the Naval officer must have a thorough understanding of the operation of the ships and machines for which he is responsible, and he must be well trained in the ways of the sea and in the rudiments of military procedure. Knowledge of the technical and military aspects of the Navy, however, constitute only a part of the general requirements of the effectively trained Naval officer.

The duties of the new officer will eventually take

him all over the world; he will be placed in important liaison with state and military officials of many countries. The youngest ensign becomes at once a military leader and a minor diplomat in the service of our nation. For this reason, alone, a liberal education becomes a necessity in the training of our officers.

There are many other considerations which have molded the Navy policy of insisting that its officers be schooled in the liberal subjects.

The efficient Naval officer must be able to express himself clearly, in speech and writing, in the routine procedure of his duties. He must have at least a speaking knowledge of foreign languages to effectively carry out many of his orders. He must be able to conduct himself with integrity in any station of society. He must have a working knowledge of mathematics and the various sciences in order to solve problems with which he is daily confronted.

In brief, the Navy demands that its officers be well-rounded individuals, capable of meeting the diverse problems of their profession.

It is for this reason that the Naval Academy has placed such profound emphasis on those usually referred to as liberal subjects — English, foreign languages, the natural sciences, mathematics, and the arts. And this is why, when the requirements of war increased the demand for officers tenfold, the Navy was able to rely with confidence on the many liberal arts colleges of our nation, for the basic training of its officer candidates.

Under the accelerated war-time program, our NROTC and V-12 students were required to spend roughly one-fifth of their training time in Naval Science classes. This fall, with the resumption of a normal academic curriculum, this requirement will be reduced for NROTC students; whereas during the war they were made to include thirty-six academic hours of Naval Science on their schedule, they will now be committed to take only twenty-four hours.

The emergency V-12 program, after having trained more than 50,000 officers, was terminated this summer. NROTC units in our various colleges will remain. It is contemplated that henceforth one-half our officer complement will be graduated from the Naval Academy, while the remaining fifty per cent will be drawn from the NROTC and other reserve organizations. Previously, the type of college degree which an NROTC student could attain has been limited. With the view in mind of increasing the diversities of its officers, the Navy will in the future allow its NROTC trainees the prerogative of taking any legitimate bachelor's degree.

It has been almost one hundred and seventy years since the Father of the American Navy, John Paul Jones, wrote the famous letter in which he set forth the requirements for the Naval officer. The language he employed seems archaic to us today, but the force of his words has not waned with the passage of time. When he wrote, "An officer of the navy — should be a gentleman of liberal education," he wrote with vision. We of the Navy today do not underestimate the portent of these words.

BY A. A. VANDEGRIFT

EDUCATION HAS always played a very important part in the making of a Marine, but today education is more important than ever. The reason for this is very simple — In modern warfare there is much more to learn.

A fact which is little known is that in time of peace and even in time of war the United States Marine Corps is engaged in the business of education to a very large extent. Much of this education is manual in nature, but a great portion of it is mental training. During the quiet years when the military organizations are pared to their minimum strength this educational process is necessary because each man must know his job as thoroughly as possible. In addition, he must know how to handle the duties of higher positions, because in war time he will be called upon to fill a post much higher in grade. It is apparent that a mind disciplined to the habits of study is an asset to a military career.

This becomes more apparent in war training when the educational process is a race against time. Then there is not the time to repeat instruction for those who are slow in learning. Improved educational methods, which made use of all the senses, helped during the last war period. At the same time we found that the men who had come fresh from educational institutions were able to adapt themselves to accelerated training most readily.

Conversely, we have found that there is no place for the closed mind in the Marine Corps. In order to get the right type of men with the right type of mind we must begin at the beginning. When we enlist a man into the Marine Corps we want him to have completed a high school education. It is our policy not to encourage a young man to quit school to join the Corps. We know that he will be of more value to us if he finishes his education first.

Nevertheless, there are thousands of young men who do not finish their high school education. Many of these enter the armed services. This does not mean that their education has been ended, for many of them who are not adapted for a scholastic education learn a trade by on-the-job training in Marine Corps or Navy Schools. At the same time, there are many who begin to regret their quitting school, and who desire further scholastic education.

Ever since 1920 the Marine Corps has made education available to all its members through the Marine Corps Institute. The Institute offers correspondence courses free of charge to a Marine no matter where he may be stationed. There are four main types of courses offered:

1. Courses to complete high school credits, leading to a high school diploma.
2. Courses as preparation for college, or for preliminary college credits.
3. Courses in specialized trades or professions.
4. Courses designed to broaden the student's military background.

Many Marines who had not completed their high school later took Institute courses to obtain their high school diplomas, and completed these courses even in fox holes. After they got away from school they realized how much an education meant to them, and they didn't let anything, not even the Japanese, keep them from getting that education. I am sure that they were better Marines for the effort they put forth on their own behalf. In a like manner, many Marines took advantage of the Institute studies to prepare themselves for the college benefits of the "GI Bill of Rights," and many who have enlisted for short terms are doing the same thing at the present time.

Others, whose interests do not lie in the direction of college, have taken up such studies as plumbing and criminal investigation, under the Marine Corps Institute. None of the above classifications, however, is a purely military concern. Actually, in each case, men who intend to return to civilian life are taking advantage of the opportunities offered by military service to prepare themselves for modern job competition which requires more and more education.

In the case of officers who intend to make a career of the service, we have found that no four-year college course can hope to be broad enough to give them the background they will need. It has been the policy of the Marine Corps to promote officers only after competitive examinations. This procedure had to be waived during the war period of rapid expansion, which means that officers who did not have time during the war to prepare themselves must now make up for lost time. Many officers were commissioned in the Marine Corps during the war who did not possess a college education. In determining which officers we were to keep in our postwar organization we considered education, personality, and the record of the individual concerned.

Insofar as educational requirements were concerned, we were able to determine mental aptitudes by the excellent tests which have been devised by the colleges for that purpose. We had many officers with outstanding combat records whom we were unable to retain in commissioned rank because of lack of educational and mental aptitude requirements. On their records, they were capable of

performing the duties of their rank. However it is apparent that they lacked the capacity to learn enough to prepare themselves for future promotions. It would not have been fair to them or to the Corps, to retain them as officers with no hope of future advancement.

However, in cases where educational requirements are lacking but the ability to learn is present we allow credit for Marine Corps Institute courses either for admission to Officer Candidates School or for the record in the case of a probationary commission. Courses accepted as credits for these purposes cover the field of Liberal Arts, ranging from Shakespeare to Spanish and from Beginning Algebra to Advanced Calculus. Any and all of these subjects help to make a student a better-qualified officer. This is not a theory. It has been demonstrated time and time again throughout years of experience.

We require that officers take certain courses which deal directly with their military duties, but in addition we encourage them, as we do all Marines, to take full advantage of every opportunity to study and improve themselves through the Marine Corps Institute. Actually, we count on having 15 per cent of all our officers either under instruction or instructing others at all times in schools of various length.

This educational program rivals that of a large university, with the difference that there is no end to it. It is a continuous process. Just as there is no point at which we can say that an individual is fully educated, so there is no point at which we can say that a Marine is completely skilled in his duties. The danger is that an individual may decide for himself that he has completed his education. As long as our officers have a background in the liberal arts we know that that will not happen. Each study opens new horizons towards which the mind can reach, and as long as the mind is reaching out it is growing. Minds that are capable of growing pay off in time of war, and they pay off in time of peace. So long as we have alert minds we shall be prepared in all ways, not merely in the directions obvious to closed and stifled minds.

Emotional Outcomes of General Education

BY ROBERT J. HAVIGHURST

THE TWO basic processes of general education are knowing and loving. Knowing consists of a range of *intellectual* activities, such as observing, remembering, forming concepts, generalizing, and reasoning. Loving consists of a range of *emotional* activities, such as desiring, appreciating, liking, admiring, enjoying, tolerating, and sympathizing. General education may be thought of as the development of these two broad categories of activities under supervision of persons assigned for the task by society.

It is not strange that there should be a conflict in educational theory and practice over the relative weights to be placed on these two basic processes. The educational conflict reflects a conflict in the broader field of human history between two ways of life. The one way, which came into western culture through the Greek tradition, emphasizes knowledge and reasoning as the means of achieving the good life. "Know thyself" is the principal commandment. The other way came down through the early Christian tradition, and emphasizes love and charity as the means of achieving the good life. "Love thy neighbor as thyself" is the most important commandment.

The fundamental problem of general education in our time is to find the proper combinations of intellectual and emotional training for the various types of young people in school and college. It appears that the relative degrees of emphasis upon intellectual and upon emotional training must vary, depending upon the nature of the student.

INTELLECT VERSUS EMOTION?

"Wipe out imagination; check desire; extinguish appetite; keep the ruling faculty in its own power." These words of Marcus Aurelius represent the extreme intellectualist position. Here reason is divorced from emotion and given the task of mastering the emotions. Nowhere are the emotions to be trusted. Education is seen as a process of training the reason to control emotion. The reason is trained to decide what should be appreciated, enjoyed, or tolerated and then, if the will is strong enough, the emotions are obedient.

Even though the extreme intellectualist position is not often found in American schools and colleges, it must be said that the intellectualist tradition has been dominant in higher education and even in secondary education until very recently.

Hyperintellectualism continues to be the occupational disease of college professors. As the masters of "those who know" they almost inevitably underestimate the importance of the emotions in life and misunderstand the role of emotion in the educative process. Even in the admirable Harvard Report,[1] one sees the influence of the unconscious intellectualism of the academic man. Although the goal of general education is defined in this Report as the "good man and the good citizen," and the Report explicitly disputes the extreme intellectualist doctrine that in education, reason is a self-sufficient end, yet the authors show their bias by giving a program for the development of the intellect in great detail while they devote a bare nine pages to a section entitled "Education and the Human Being" in which qualities other than in-

[1] *General Education in a Free Society*, pp. 73 ff., 167 ff. Harvard University, Cambridge, Massachusetts. 1945.

tellectual ones are discussed as desirable results of general education. And even in this brief section they are careful to limit the responsibility of the schools for such qualities. "Other social institutions are concerned with helping the individual develop personal competence, while the schools have the special and major responsibility of furthering the growth of intellectual abilities."

In sharp contrast to the intellectualism that prevails in most writing by college educators on general education, the series of books written by faculty members of Sarah Lawrence College describes a very different theory and practice. Especially in the book by Murphy and Ladd, *Emotional Factors in Learning*,[2] is there emphasis upon the emotional development of the individual as a goal of general education. As might be expected, some reviews of this book, written by college faculty members, complain that it is not "logical." The concepts of the Sarah Lawrence group concerning learning and the nature of human behavior are so different from the concepts held by the majority of people in higher education that there is bound to be some difficulty of communication between the two groups.

At the other extreme from the intellectualist position is the view that the "natural man" is the good man; the impulses and emotions are trustworthy guides to action, and should be indulged with as little interference by society as possible. This position is not held by anybody in the field of education, although some critics of "progressive" education have contended that the theories of the Progressives border on this extreme.

The position held by a growing number of educators, and that from which this paper is written, occupies a middle ground between the two extremes that have been mentioned. This position derives from the educational philosophy of John Dewey and the psychology of a very large proportion of the psychologists who have been studying and writing about the nature of personality since 1920.

Man is recognized as both a knower and a lover, with the two sets of characteristics — the intellectual and the emotional — thoroughly and inextricably bound together. Primacy is not given to the intellect, nor to the emotions. The human organism is seen as profoundly unified. The inner world of man is one in which the desires and appetites operate in the closest connection with the intellect and in ways which do not allow the intellect a clear dominance. During emotion there are physiological changes which affect the functioning of the intellect. On the other hand, the mind can influence the physiological state of the body. All behavior, including the intellectual, is a function of total personality.

According to this view of things, the educator talks nonsense if he proposes a scheme of education which involves only intellectual exercises and pays no attention to the explicit teaching of young people to appreciate certain things, to get enjoyment from certain experiences, and to sympathize with other people when they fall into misfortune.

Indeed, every group of teachers who have taken full responsibility for the education of young people have recognized in their actual educational programs the importance of emotional outcomes of general education, regardless of what their educational theories may be, on paper. An illuminating example is afforded by the Experimental College of the University of Wisconsin. The faculty of the Experimental College, led by Alexander Meiklejohn, was charged with the task of studying "the content of study, the methods of teaching, and the *determining conditions* of undergraduate liberal instruction."[3] At the very start, the faculty concerned itself with the content of study and methods of teaching. Most of the young teachers in this experiment commenced with a strong intellectualist bias. They thought their mission would be accomplished when they found the kind of content and methods of teaching that promised to cultivate and strengthen the minds of their pupils. But very soon they discovered that

[2] Lois B. Murphy and Henry Ladd, *Emotional Factors in Learning*, Columbia University Press, 1945.

[3] Alexander Meiklejohn, *The Experimental College*. Esp. pp. 229-241. Harpers, 1932.

they must pay attention to the emotional development of their students if they were to succeed at all in promoting intellectual development. The phrase in their assignment, "to study the *determining conditions* of undergraduate instruction," took on meaning for the first time. A special committee reported to the Experimental College faculty, "one of the determining conditions of undergraduate instruction is the emotional state of the student" and made proposals for work in the arts and crafts, for lectures and discussions on sex, for parties and informal social life. They also brought in Dr. Frankwood Williams, the psychiatrist, who lived in the dormitory with the students for a time and then made recommendations for the program of the College and for the in-service training of the faculty.

There is no college or secondary school in which the problems of general education are seriously studied which has not developed procedures aimed explicitly at the emotional development of the student. In the St. John's College program, for example, music has played a very important part. Again, when the four-year college was created at the University of Chicago, the headlines were given to the intellectualistic curriculum, but at the same time a program of social and athletic activities was developed around the residence halls, dormitory supervisors were selected with great care, religious activities were promoted; in short, a program was developed to educate both emotions and intellect.

While the colleges with a strong intellectualist bias quietly and unobtrusively make provision for the emotional outcomes of education, other colleges are much more explicit and open about it. Such, for example, is the University of Minnesota, which has been studying the problems of general education of students of widely varying abilities and backgrounds since the start of its General College in the early 1930's. The new Minnesota Union symbolizes the interest of this University in the emotional development of students. Here the people of the state may see the finest, most modern building of the campus boldly designed to cater to the emotional needs of students. There is an arts and crafts studio for the pleasure and relaxation of students who want to do something with their hands, quiet rooms for listening to recorded music, lounging rooms for informal visiting and conversing, meeting-rooms and offices for clubs and other student organizations, a theatre and a ballroom and a bowling alley. The thorough-going intellectualist would shudder at the sight of the Minnesota Union. At best he could only think of its being useful as a testing ground for the efficacy of education in training the reason to control the appetites and keep the student from wasting his time in this palace of Epicurus.

All colleges, then, do pay attention, in some degree, to the education of the emotions. Secondary schools as a rule pay more attention to this phase of education than do the colleges. They are forced to do so by the circumstances of their having a more widespread range of abilities and social backgrounds among their students, and their dealing with boys and girls in early adolescence, when emotional factors are especially important in the educational process. On the whole, the secondary schools are more alive and sensitive to the emotional objectives of general education than the colleges are. They have to be.

EMOTIONAL OUTCOMES OF GENERAL EDUCATION

There are two principal ways in which the emotions enter into general education. First, emotions enter into motivation for learning. Learning is not a self-motivating process, except to a very limited degree in a very few persons. There is no natural hunger for knowledge which is assuaged by learning, as hunger for food is satisfied by eating. Learning takes place for the sake of rewards, or to avoid punishment. If man were not a creature with desires, hopes, fears, and purposes, he would not be a learner.

We know that learning takes place most rapidly and efficiently: (1) when it serves the purposes of the learner, (2) when the learner sees clearly the relation between the learning task and his purposes and goals, and (3) when the learner is rewarded directly and immediately for success. A

community of learners, such as a school or college, is effective in proportion to its success in organizing a system in which everybody is expected to learn, and rewards are given for learning. In such a community, the teachers and the leaders set an example of learning, there is general social approval for those who learn and disapproval for those who fail to learn, and there are special honors and prizes for those who learn outstandingly well.

This is taking a positive view of the emotions. It is the antithesis of the view taken by the pedagogue who says, "I don't care what my pupils study as long as they dislike it." There is no room in general education for the negative view of the emotions which considers reason and knowledge as their natural enemy and the task of education the expansion of the empire of reason at the expense of the domain of emotion. In general education, reason and the emotions should be allies, not enemies.

The second way in which the emotions enter into general education takes us back to the initial distinction between the two basic educational processes of knowing and loving. In general education, boys and girls should be taught how and what to know, and how and what to love. In other words, the emotions, as well as the intellect, should be educated. Boys and girls should learn what and how to desire, appreciate, admire and sympathize.

The intellectualist might say at this point, "This is what we have been contending all the time. Reason should be developed and trained, so that it controls our desires, appreciations, admirations and sympathies." But the intellectualist here sets reason over against the emotions, while we have been attempting to place reason and the emotions in a close working relation with one another. The task of general education is to find effective ways of educating both reason and the emotions in young people who come to be educated with a great variety of abilities and social backgrounds. This task is better commenced without the prejudgment that intellectual training is the key to the whole process.

The emotional outcomes of general education may be discussed under four broad headings.

Social adjustment. Social adjustment is not something that just happens in the individual with the passing of years. One must learn to get along with people just as one must learn to think logically. The task of learning to get along with people requires one to learn to work with others for a common purpose; to learn to lead without dominating, and to follow when there is competent leadership; to learn attitudes of sympathy and tolerance toward other people. Little children do not yet know how to get along with each other. A teacher or some other adult must constantly control the situation. The child has to learn how to behave as an equal among equals, and how to cooperate with strangers for a common purpose. Some of the preliminary lessons are taught him in the family and neighborhood play group, but it remains for the social situations of adolescence to serve as the laboratory in which he works out the social habits and attitudes that will characterize him as an adult.

An essential aspect of social adjustment is learning how to get along with age-mates of the opposite sex. Here the sexual impulse provides the impetus for learning. Is this impulse to be curbed, to be freely gratified, or to be sublimated into a variety of socially constructive activities? Every school and college must and does answer this question in one way or another.

The school and college community, then, is a laboratory in living where young people learn to live together as adults. The recreational and avocational life of the institution is no fad or frill if it is planned and directed so as to promote social adjustment.

Social loyalties. Another task of the individual during the adolescent years is to develop attitudes of loyalty to the ever-widening social groups of community, nation, and world. In a society so complex and heterogeneous as ours, this is a difficult task. With so many different racial and religious groups and such deep conflicts of interest

between economic groups, the very strong divisive forces must be counteracted in modern society by even stronger forces of social solidarity.

The process of binding an individual to his social group goes on from birth. He early learns to define his own welfare in terms of the welfare of his family, and to sacrifice certain individual pleasures for the good of the group. This process is extended steadily during childhood and adolescence. The child learns to be a participating member of his own age-group, with the give and take that are essential to group loyalty. The adolescent is ready to become affiliated with larger social groups, and to grasp the more abstract concept of loyalty to a nation and even to a world government.

For the development of social loyalties the intellect and the emotions are both necessary. It takes a very considerable degree of intellectual development to understand the economic interdependence of farmers, industrial workers and the owners of capital; and it requires an even greater reach of the mind to grasp the concept of interdependence of people from opposite sides of the earth. But this, alone, is not enough. The broad social loyalties necessary for intelligent citizenship in the modern world cannot be gained simply by reading books that show the logic of international organization.

More than anything else there is needed a fund of enjoyable emotional experience in social groups of the widest diversity of race, nationality, and social class. The secondary school and college can help to supply this need.

When good or bad fortune strikes anywhere in the world, the student in America should be led to rejoice or to mourn as the case may be. When famine threatens the lives of Chinese or Germans, something should be done about it in American schoolrooms. To feel with human beings anywhere in the world is the goal.

Esthetic satisfactions. A third emotional outcome of general education is love of and responsiveness to beauty, in art and nature and the common things of life. Esthetic satisfactions will come not only through work in literature but especially through experiences in what may be called the active arts — orchestra, band and chorus; sketching, modelling, pottery-making, wood-working, and metal working; play acting, producing, and writing; interior decorating and work with textiles. This kind of training should come to all students, not just a few who want it for vocational purposes. It must come largely through the extra-curricular and avocational life of school and college.

Personal adjustment and philosophy of life. The growth in the human being of that complex set of attitudes and sentiments called the *self* is, of course, a phenomenon of the emotions as much or more than it is a phenomenon of the intellect. The young person has the task of self-appraisal and self-acceptance as well as the task of building a set of values and committing himself to the realization of those values.

For this the school and college need to supply the sympathetic reassurance of wise teachers and counsellors and they need to inculcate a truly Christian and democratic set of values. Some institutions rely heavily upon neighboring churches for this aspect of general education. Others consider it fully within their own province.

CONCLUSION

General education is like an ellipse, with its two foci the intellect and the emotions. The orbit of general education is determined by the mutual interaction of the two basic processes of knowing and loving. The questions to be asked of an educational program are not only, "What facts and principles are to be taught? What mental disciplines are to be developed?" but also, "What attitudes and appreciations and values are to be developed?"

In achieving the emotional objectives of general education it is essential to couple the thinking of the individual with his acting. But if thinking is taught in schools and colleges and acting is put off as the responsibility of other institutions, the educator becomes party to a dangerous divorce. And where is the institution outside of school and

college in our society which has the hold on young people necessary to teach them what and how to desire, appreciate, admire, and sympathize?

The principal danger in American education is that school and college will leave the deeper forces of the student's life untouched.

Mathematics in General Education

BY CUTHBERT C. HURD

I. THE DECLINE OF MATHEMATICS AS GENERAL EDUCATION IN THE HIGH SCHOOL

IN THE early nineteenth century, the place of mathematics as general education in the secondary schools and the colleges of the United States appeared secure. Still influenced by the classical encyclical studies and maintainable because of the pre-professional and pre-leisure interests of the student, the required curriculum of both the high school and the college included mathematics. In 1827, for example, the teaching of algebra, geometry, and surveying was required by law[1] in every high school in towns of 500 families or more in Massachusetts. And in the 1820's the general course of studies to be pursued by each class of undergraduates at Allegheny College included: by the Freshmen, arithmetick; by the Sophomores, mensuration and algebra; by the Junior Sophisters, algebra, plane geometry, trigonometry, conick sections, surveying, mensuration of heights and distances, navigation; and by the Senior Sophisters, dialling, projection of the sphere, spherickgeometry and trigonometry with their application to astronomical problems. The high school teachers of this period were college graduates, and therefore students of mathematics. Their application of the assumption that all students needed mathematics simplified the construction of the college curriculum since the college could assume an approximate uniformity, however elementary, of mathematical preparation among entering students.

Despite the attacks of Sir William Hamilton[2] and others on mathematics as a part of liberal education, the mathematics requirements for the general student remained substantially unchanged until the end of the nineteenth century, although a number of topics formerly taught in college were gradually shifted to the high school. Beginning in the 1890's, however, a number of related factors combined to subject the requirement of mathematics for all high school and college students to serious scrutiny. The elective system was gaining in prominence and every requirement was therefore questioned. The great increase in high school enrollment brought an increased demand for high school teachers which the liberal arts colleges were unwilling or unable to meet. The teacher training curricula which were developed did not, in general, require mathematics as general education. Consequently the "new" teacher, who had not necessarily studied college mathematics but who did observe correctly that mathematics as taught made no great impression on about one half of the "new" students, began to question the appropriateness of any mathematics requirement in the high school. At about the same time, important men in the field of higher education — President Eliot,[3] President Butler,[4] and Abraham Flexner,[5] for example, raised questions regarding the content of mathematics

[1] *An Act of the Commonwealth of Massachusetts, A.D., 1827, To Provide for the Instruction of Youth,* Christian Register Office, Boston, 1828, pp. 1-2.

[2] *Discussions on Philosophy and Literature,* London, 1853, pp. 263-340, p. 707.

[3] *Educational Reform,* New York, 1898, pp. 92-93.

[4] *The Meaning of Education,* New York, 1912, pp. 170-173.

[5] *A Modern School,* New York, 1916, p. 8, p. 14, p. 17.

courses and the appropriateness of required mathematics in the curriculum. Though a majority of the men who wrote on the subject in this period believed in the mind training value of properly taught mathematics,[6] there followed a large number of studies, based on the successive psychological theories of "General Faculties," "Special Faculties," and the Gestalt School, which were designed, at least in part, to determine through an investigation of "Transfer" what part mathematics should play in the curriculum for the general student. The benefit of hindsight permits these observations. (1) In many experiments at the beginning of the century fewer than seven subjects were used,[7] whereas the pioneering studies of the theory of sampling errors from "small samples" were not published by Student until 1908, Karl Pearson in 1915, and R. A. Fisher in 1915. Therefore, the assumption of "normality," which is not necessarily valid, was made in the earlier studies. (2) The battle for and against mathematics was apparently waged on the single criterion of "Transfer." If the use of this single criterion were correct then a study by E. L. Thorndike[8] *might* lead logically to the conclusion either that *all* subjects should be included in the required curriculum or that *no* subjects should be so included. To quote from Thorndike:

> The expectation of any large differences in general improvement of the mind from one study rather than another seems doomed to disappointment. The chief reason why good thinkers seem superficially to have been made such by having taken certain school studies, is that good thinkers have taken such studies, becoming better by the inherent tendency of the good to gain more than the poor from any study. When the good thinkers studied Greek and Latin, these studies seemed to make good thinking. Now that the good thinkers study Physics and Trigonometry, these seem to make good thinkers. If the abler pupils should all study Physical Education and Dramatic Art, these subjects would seem to make good thinkers. These were, indeed, a large fraction of the program of studies for the best thinkers the world has produced, the Athenian Greeks. After positive correlation of gain with initial ability is allowed for, the balance in favor of any study is certainly not large. Disciplinary values may be real and deserve weight in the curriculum, but the weight should be reasonable.

Whatever the reasons for the decline of mathematics enrollment in the high school, the decline did take place. In a study of the number of students in secondary schools and the percentage registered in certain mathematics courses for ten representative states in 1928 and 1934, Carl A. Jensen[9] shows that whereas secondary school enrollments were increased by approximately fifty per cent, the percentage of students enrolled in elementary algebra and in plane geometry decreased by about one third. In the State of New York not only did the per cent of students enrolled in mathematics decrease during the six-year period, but the *actual number* of students thus registered also declined. This decline in high school enrollment in mathematics courses had a pronounced effect on the admission standards and the general education requirements of those state-supported colleges which were required by law to accept any graduate of a high school of that state, of those institutions which sought students during the depression, and of those institutions which agreed to take a high school graduate irrespective of his formal academic background.

The decline in mathematics enrollment was sharply reversed immediately preceding and during World War II. Word was passed that the more remunerative jobs in industry required a knowledge of elementary mathematics. The Training Programs of the Armed Services were under the direction of regular Army, Coast Guard, and Navy officers who were Academy graduates and who therefore had probably studied mathematics through calculus and differential equations. Not only did many of these officers believe in mathematics "in itself" but they were aware of the many technical jobs in the Services for which a knowledge of ele-

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[6] Florian Cajori, *Mathematics in Liberal Education*, Boston, 1928, p. 161.

[7] *The Place of Mathematics in Secondary Education*, National Council of Teachers of Mathematics, Fifteenth Yearbook, New York, 1940, p. 218.

[8] *Journal of Educational Psychology*, V. 15, 1924, pp. 1-22, 83-98.

[9] "Registrations in Mathematics," *School Life*, V. 22, No. 7, pp. 211-212.

mentary mathematics through trigonometry is a strict prerequisite. Consequently many service schools either had elementary mathematics in the curriculum, had an elementary mathematics achievement examination as part of the entrance requirement, or both. In the Coast Guard, for example, fifty per cent of the special schools for enlisted men included elementary mathematics in varying degrees in the curriculum, and seventy per cent of the enlisted men's schools required a certain standard of achievement in elementary mathematics for admission. Elementary mathematics therefore experienced great popularity in the trade school, the high school, and the college. Mathematics was the "Royal Road" to high wages or to a commission. However, many of the "refresher" courses and "mathematics-made-easy" courses which were offered taught specific mathematical skills as applied to specific technical situations. That emphasis was not always placed on the fundamentals of elementary mathematics is indicated by the study of A. J. Kempner[10] who reports that "of 421 high school students from all parts of the country who entered in College of Arts and Sciences at the University of Colorado in October 1944 nearly one half could not multiply 74.5 by 0, — and 90 per cent could not add $\frac{1}{x} + \frac{1}{y}$."

An effect of the war then was the increased demand for elementary technical mathematics. Even though peace-time industry will perhaps continue this demand, no evidence is at hand to show that the long-time decline in the traditional mathematics requirements and in the enrollments in these courses has stopped. College curriculum committees must therefore lay their plans for mathematics in general education on the assumption that, with the exception of students who pursue a college preparatory course in a high school whose mathematics program is adequate, many students are seeking admission to college who have not completed the two-year sequence of elementary algebra and plane geometry.

II. REMARKS ON THE CONTENT OF ELEMENTARY COLLEGE MATHEMATICS COURSES

As was stated in the preceding section, the classical curriculum included arithmetic and geometry. However, an increasing knowledge of algebra, the revival of trigonometry[11] in the fifteenth century, and the publication by Descartes in 1637 of *Discourse de la Methóde*, of which 106 pages were devoted to analytic geometry, had an effect on the curriculum. For example, when Newton entered Trinity College in 1660, he studied not only Euclid's *Elements*, but he studied also Wallis' *Arithmetic of the Infinite* (1665), Descartes' *Geometry*, and the *Lectures* of his friend and teacher Isaac Barrow. Following Newton's *Method of Fluxions* (1671) and the *Principia* (1687), and the independent development of calculus by Leibniz at about the same time, calculus gradually became a part of college mathematics both abroad and in this country. As early as 1719, for example, a bachelor's thesis at Harvard bears the title[12] *Fluxio ex quantitate fluente Invenitur*. It was not until about the middle of the nineteenth century, however, that calculus as a recognized course appeared in college catalogues. In 1850, for example, Dartmouth and Yale included calculus in the sophomore year of mathematics. There remained an apparent tendency, however, to regard mathematics principally as a prerequisite to astronomy. This tendency was perhaps understandable since, although Newton developed his calculus to discover the results of the *Principia*, he then rewrote the proofs in terms of geometry so that his contemporaries might "the more readily grasp the main theme — the dynamical harmony of the heavens."[13] An *understanding* of Newton's principles of dynamics and of his study of the laws of motion in resisting

[10] "Mathematics in High School and College," *The Mathematics Teacher*, V. 38, 1945, p. 152.

[11] Florian Cajori, *A History of Mathematics*, New York, 1901, p. 140.

[12] David Eugene Smith and Jekuthiel Ginsburg, *A History of Mathematics in America Before 1900*, Chicago, 1934, p. 23.

[13] E. T. Bell, *Men of Mathematics*, New York, 1937, p. 109.

media as developed in the *Principia* depended also upon the calculus. Therefore, as the study of the physical sciences and engineering entered increasingly into the curriculum so also did the study of calculus.

Fields of study other than the physical sciences came to depend more and more upon the calculus. By 1900 the student of the biological sciences who wished to understand even the earlier methods of Francis Galton, Karl Pearson, and G. Undy Yule as applied to genetics, medicine, and biometrics generally, realized that the study of calculus was necessary. In the social sciences the mathematical work of Cournot, *Recherches sur les principes mathématiques de la théorie des richesses (1838)*, led to the systematic study of econometrics and to the contemporary work of Irving Fisher, G. C. Evans, H. Hotelling, H. T. Davis, C. F. Ross, and others. The present-day student of psychology or education needs an understanding of L. L. Thurston's *Vectors of Mind* which requires mathematical preparation *beyond* the calculus. Indeed any student of society who believes that social science is concerned with statements of the character "given A, there is probability that B" needs mathematics through the calculus in order that he may understand even the more elementary statistical methods which are involved. The philosopher who studies current notions of the nature of the universe needs a considerable amount of advanced mathematics. President Alexander G. Ruthven, in a letter written to the author in 1942, described the importance of mathematics as a tool for other branches of knowledge when he wrote:

> Years ago, if one observed that a student was electing several courses in mathematics he could reasonably assume that the student in question was preparing himself either to teach mathematics, to study astronomy, or to follow one of the engineering professions.
>
> Today, this assumption would not be justified. Students now realize that the researches and technical literature associated with more professions require more than an elementary knowledge of mathematics, and this realization accounts in large measure for the recent steady increase in the elections of courses in mathematics. These students aim to keep abreast of the future developments in their chosen fields.
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> In general, mathematics plays an important part in many aspects of business, biology, chemistry, psychology, philosophy, and medicine, as they are studied and practiced today. For example, many of the newest researches concerning the heart are very mathematical and the same may be said of special investigation even in the domains of speech and literature. Unfortunately, many of our graduate students realize the importance of a mathematical background too late in their program, when it is either very difficult or impossible to delay their advanced studies in order to learn basic mathematics which they should have mastered years earlier.
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> In brief, it would be far easier to name twenty professions for which a mathematical background is desirable than to try to think of only two in which such preparation would not be productive. If there be any question concerning the importance of mathematics in a liberal education, this is the real answer.

The importance of the study of mathematics beyond calculus for prospective mathematics teachers, statisticians, and members of the actuarial profession is well known. Less well known are the requirements for advanced mathematics in graduate engineering study as recommended in 1945 by the Committee on Graduate Study of the Society for the Promotion of Engineering Education, in Industrial Mathematics,[14] and in the important program in Advanced Instruction and Research in Mechanics[15] which was developed during the war period at Brown University.

Over the past one hundred years then, mathematics through calculus has gained an increasingly important place in the college curriculum. However, it has gained this place primarily because of its importance as a tool subject and therefore as *special education* rather than *general education.* This fact reflects itself in the content of the usual calculus textbook. It is apparently assumed that calculus, being a "service" course, must anticipate as many of the special needs of specialists in other

[14] Thornton C. Fry, *Industrial Mathematics*, reprinted from *Research — A National Resource — II*, Section VI, Part 4, pp. 268-288, a house document of the 77th Congress. Printed also by the Bell Telephone Laboratories.

[15] R. G. D. Richardson, "Applied Mathematics and the Present Crisis," *American Mathematical Monthly*, V. 50, 1943, pp. 415-423.

fields as is possible. Consequently page after page and even whole chapters are devoted to "applications" and to special tricks for solving problems of a special class. As a result, there is little time remaining for a leisurely, systematic, and rigorous treatment of the *fundamental ideas* of the calculus. In the end, however, both the specialist and mathematics are losers. One or two years after the calculus course, the specialist encounters the special problem. Not remembering the special trick, he resorts to the handbook. On the other hand, when he encounters a problem whose solution demands the use of the fundamentals of the calculus, he may be helpless since these fundamental ideas of calculus were never sufficiently familiar to him. (It is assumed here that the specialist has not also studied advanced calculus in which the point of view is usually general rather than special.)

It is the opinion of the writer then that the content of the usual beginning calculus course needs a wholesale revision. Special techniques and applications should be avoided whenever possible. The whole course should be pointed toward an understanding of the principal ideas of the calculus. Calculus would then grow in stature as special education and at the same time it could make a strong claim as general education.

III. POSSIBLE CONTRIBUTIONS OF MATHEMATICS TO GENERAL EDUCATION

Requirements for six colleges. Examples of the wide variations among colleges in mathematics entrance standards and in required mathematics courses are numerous. Even given the group of colleges indicated below which set (either through formal entrance requirements, or achievement and aptitude tests, or both) an entrance requirement which is the equivalent of about three years of high school mathematics, there is a variation in college required courses. For example, Columbia and Harvard have no required mathematics. At Allegheny and Dartmouth, one year of mathematics may be elected to satisfy a portion of the requirements in the Division of Science. At Yale, the requirement in Systematic Thinking for students on the Standard Program may be met by one year of mathematics, logic, or the structure of language. At Princeton each student is required to attain before admission to the Junior Class: "a reading knowledge of one foreign language; or, a knowledge of trigonometry, and of either coordinate geometry and differential calculus or differential and integral calculus." Since mathematics can be avoided in each case, each of these colleges apparently agrees that the general education of their students in mathematics can be met by the above-mentioned entrance requirements which include approximately: familiarity with the fundamental operation of arithmetic (addition, subtraction, multiplication, division); an introduction to the "abstract" concept of algebra in which the symbol "x" may represent any one of a whole class of numbers, familiarity with the fundamental operation of arithmetic as applied to algebra, an appreciation of the convenience of the exponential notation (logarithms) in certain types of calculation, ability to translate certain verbal statements into algebraic statements and vice versa, ability to solve linear and quadratic equations, ability to construct and understand simple graphs; an acquaintance with certain geometrical concepts in the plane, ability to make certain constructions, to prove certain theorems, and to solve simple exercises in the plane.

Mathematics and understanding the physical universe. Each of the six colleges mentioned has a physical science requirement which is almost unavoidable. As indicated, however, mathematics can be avoided. It is well to note then, in view of the minimum mathematics requirements outlined above, that the content and the methods of the courses in physical science are somewhat determined in advance. Students whose most advanced course is intermediate high school algebra can *understand* the concept of the material universe as held prior to 1700. These students cannot hope to *understand* the Newtonian concept of the universe which, though now outdated, continues to be useful to us in almost every aspect of our daily life. The Newtonian world is a dynamic world in

which the concepts of time, distance, rate of change of distance, and rate of change of rate of change of distance are fundamental. One can talk about these concepts and one can substitute numbers in the formulas but one cannot define these concepts without using *differential calculus*. In the opinion of the writer, therefore, the physical science course for the student with only three years of high school mathematics must be essentially a descriptive course and therefore has a tendency toward being a course "about" science. A frequently expressed objective of general education is that of leading the student to an understanding of the physical universe. If by "understanding" it is meant that the student shall be made aware of the basic logical concepts upon which the physical sciences rest then there is an argument for required mathematics as preparatory to the required physical science course. Indeed this argument is as cogent as the argument for required mathematics for the physical science specialist. This argument leads to the conclusion that *a knowledge of the fundamental notion of calculus is a part of general education.*

Mathematics and logic. Many published statements of objectives of general education contain statements such as "to think through problems," "to use logical methods in the solution of problems," "to think logically and critically." The pious assumption is then sometimes made that each teacher will insist upon logical thinking by his own students. This assumption places an undue burden upon the student who is never told what logical thinking is. The logical Faculty may therefore wish to place the responsibility for the explicit teaching of the elements of logical thinking upon some group of teachers who will meet the student early in his college career. The departmental affiliations of these teachers are unimportant. It is of great importance, however, that these teachers be aware of the elements of deductive logic (undefined terms, defined terms, postulates) and the postulates of logic (identity, contradiction, excluded middle, postulate of syllogism). These teachers must be able to elucidate logic through the introduction of examples which are drawn from the student's experience, and finally, these teachers must be able to indicate the application of logic to the humanities, the sciences, and the social studies. These teachers themselves must therefore have had a general education which included logic.

A claim which teachers of mathematics could make for being included in the group assigned to teach the elements of logical thinking is that pure mathematics is pure logic. Pure mathematics is concerned with the statement "if x, then y." The subject matter of pure mathematics is therefore pure logic. Many mathematical examples of logical systems are readily understood by college freshmen. Indeed, mathematical examples are frequently used in textbooks of logic and in treatises on linguistics and semantics. It is also true that many teachers of mathematics are interested in logic as applied to fields other than mathematics. Consequently these teachers should be considered when a college faculty selects its staff for the teaching of the elements of logical thinking.

Mathematics and our intellectual heritage. Mathematics is an important part of our intellectual heritage. If proof of this statement is required one has only to consult the works of the Greeks, the Romans, the Medievalists, the early Moderns, and the Moderns, and note the attention which has been devoted by important thinkers to mathematics *purely as an intellectual activity* leading toward abstractness and generality.

The ignorance of the usual high school and college graduate concerning mathematics as a part of our intellectual heritage is astounding. The high school graduate whose mathematical education stopped with plane geometry may continue to regard a postulate as "self-evident truth." If he has ever heard of the "three problems of antiquity" he may continue to waste paper and newsprint by submitting solutions for the trisection of the angle. He may even imagine that Zeno's Achilles continues to pursue the tortoise. The college graduate who has studied calculus will know something of the work of Descartes and Newton, but his

mathematical education is about 250 years old. He may therefore be forgiven for believing that a straight line is always the least path between two points, that through a point outside a line one and only one parallel can be drawn, and that the final clincher in any argument is the statement "as surely as two and two make four." Many college graduates perhaps believe that mathematics died 250 years ago, whereas in fact, the amount of important mathematics which has been discovered in the past 250 years is many hundred times the amount which was discovered in all of recorded history prior to 1700. Mathematics is continually deepened by a clarification of its fundamental concepts, it is continually elevated through the introduction of new postulational systems, and it is continually broadened into applied science as models are constructed for existing postulational systems.

No attempt will be made here to describe those ideas of modern mathematics which can and should be taught to the college student. Rather it is suggested that the interested reader spend a few interesting evenings with books such as Bell's *Men of Mathematics*, Courant and Robbins' *What Is Mathematics?*, Kasner and Newman's *Mathematics and the Imagination*, and Lieber and Lieber's *The Education of T. C. Mits (The Celebrated Man in the Street)*. He might then wish to discuss the question further with any colleague who is a mathematician.

IV. CONCLUDING REMARKS

Educational institutions differ in standards and in objectives and the writer will not presume to make specific suggestions regarding the place of mathematics in the program of general education of any one of them. A few general remarks are perhaps admissible however.

a. The institution which finds that its plans for mathematics in general education are complicated by the wide variation in mathematical achievement presented by its entering students can insist that the teachers which it trains have a general education in mathematics; and it can inform secondary school counselors regarding its own estimate of the place which mathematics should occupy in general education.

b. It is encouraging to note that an increasing number of competent mathematicians are becoming interested in the allied problems of selection of students, teacher training, content of mathematics courses, and general education. Consequently, there is available the excellent *Report on the Training of Teachers of Mathematics*[16] which was prepared by a Commission of the Mathematical Association of America. After estimating that "at least 80 per cent of those receiving the doctorate in mathematics will publish no useful research beyond their doctoral theses and closely associated results," the Commission recommends breadth of training for prospective teachers of mathematics and includes a suggestion for a new type of doctoral degree in mathematics. A number of papers concerning general mathematics have appeared in the *American Mathematical Monthly* and in the *Mathematics Teacher*. The Mathematical Association of America has appointed a Coordinating Committee which is to keep in touch with all educational movements in the United States and Canada. Finally, a number of colleges have introduced, or will shortly introduce, courses in mathematics for the general student. The following list of such colleges is neither complete nor necessarily typical: Allegheny, Brooklyn, University of Buffalo, Chicago, Northwestern, St. John's, and Yale.

c. A mathematics course which selected its material from ancient and modern mathematics, which was taught with emphasis on the understanding of mathematical ideas, and which emphasized mathematics as logic and as a humanity would be an important addition to the general education curriculum.

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[16] *American Mathematical Monthly*, V. 42, 1935, pp. 263-276.

The Place of Social Science in General Education

BY ELBRIDGE SIBLEY

ANY INTELLIGIBLE discussion of social science must unfortunately begin with a definition. Otherwise the statement that the place of social science in general education is insecure might appear palpably absurd in view of the vast number of courses which are listed under that heading. For purposes of the present argument, the term social science will refer to the application of severely scientific methods to the study of social structures and behavior. The notable report of the Harvard Committee on General Education — a report with which incidentally it will presently be necessary to take issue on some points — offers a convenient characterization of scientific method. Contrasting the natural sciences and the humanities, the Committee observes:

> The former describe, analyze, and explain; the latter appraise, judge, and criticise. In the first, a statement is judged as true or false; in the second, a result is judged as good or bad. The natural sciences do not take it on themselves to evaluate the worth of what they describe. . . . Science . . . limits itself to events that recur and to things which permit measurement.[1]

Everyone seems to agree that social studies are a necessary part of general education, but there is no such unanimous support for social science as we have defined it. At least three differently motivated groups oppose or obstruct the progress of social science, and there are also cases of poor morale within the camp of those who profess social science.

On one hand the attack is pressed by military-minded men who proclaim that what this country needs is discipline, meaning by discipline the habit of accepting without question whatever those in authority tell us. Most but not all of these adversaries come from outside the academic realm. The only defense against their doctrine is reassertion of Thomas Jefferson's vow of "eternal hostility against every form of tyranny over the mind of man." Under that banner all believers in the worth of human personality can make common cause, whether they call themselves scientists, humanists, or laymen. It is a serious cause, for the exponents of authoritarian discipline in the United States are no straw men.

Then there is what Robert M. Hutchins calls the "cult of scientism," [2] whose devotees contrast the superb efficiency of our apparatus for exploiting nature with the faltering efforts of social science merely to describe society, let alone controlling it. It seems hardly necessary to analyze at length the doctrine of the all-sufficiency of natural science, as it is so patently inconsistent with the fundamental aims of general education. Against its advocates, as against the former enemy, scientists and humanists are united. Some of the most sincere pleas for more and better work in social science are now uttered by conscience-stricken nuclear physicists.

The third enemy force consists of intolerant humanists. It includes not only those who call upon us always to look backward away from today's complexities to the serenely sure simplicities

[1] *General Education in a Free Society*, Cambridge, Harvard University Press, 1945, pp. 59, 60.

[2] *Education for Freedom*, Baton Rouge, Louisiana State University Press, 1944, p. 33.

of antiquity, but all who insist that society and social behavior are somehow different from all other phenomena and therefore cannot be scientifically studied. The attack of this cohort is the most subtle, and requires the most careful attention, to which we shall presently return.

All of these external enemies are in effect, though not always consciously, campaigning for a revival of authoritarianism. They all repudiate the democratic belief that men can be happiest (and in the long run most peaceful) if they are able to exercise their powers of logical analysis to the utmost in choosing their own means to happiness. The overt authoritarian simply forbids individual rational thought; the fanatic disciple of "scientism" says let's forget about social problems and devote ourselves to the service of machinery; those humanists who are anti-scientific declare either that men must follow their own undisciplined intuitions or that they must heed only the words of the deceased writers of great books. All of them deny that it is worth while to try our best to understand the social environment by the same fundamental scientific method which has been so conspicuously successful when applied to the non-human environment. Such a lack of faith is an understandable consequence of post-war fatigue.

In the more optimistic early years of the Twentieth Century there was carved over the lintel of at least one typical American school house the motto *Not What to Think but How to Think.* Each individual of course has to know both how and what to think if he is to live satisfactorily in an individualistic society. The pendulum of educational emphasis swings between the two. It is ironic that just as we are emerging from a war which we fought partly because our opponents had inverted the slogan and had taught their people what rather than how to think, many voices in our own country are clamoring for the same policy here.

Let us now look further into the question why many of the humanists who are the most articulate advocates of more adequate general education seem unwilling to accord social science a significant role in developing young people's ability to think, although they emphasize the necessity of training in natural science. For one thing, it is true beyond dispute that the social sciences are far less mature than the natural sciences: that is to say, their hypotheses are less definite and thus far less adequately verified. Hence some people may conclude that it is merely disturbing to young minds to have to study things which are only tentative hypotheses and not finally proven facts; that the younger generation would be still more demoralized if it were made to realize how little its elders really know. Yet in retrospect we can see that when the physical sciences first entered the general curriculum under the name of natural philosophy, they were quite as immature as the social sciences are today. And that, by the way, was not a very long time ago, in terms of the long perspective which the humanists rightly insist that an educated person have. The charge of immaturity cannot warrant neglecting social science, unless it can be proved that its immaturity is a case of permanently arrested development. If we glance for a moment at the progress social science has already made during the few decades of its existence, rather than looking exclusively and hopelessly at the endless vista of unexplored territory ahead, we shall have to admit the possibility of some further progress. And if we admit the possibility of thinking scientifically about society, we must also admit its inevitability.

Some readers will immediately mark this last conclusion *non sequitur.* But it is premised on the repeated observation that once verifiable scientific knowledge develops in any field, it supersedes all other kinds of knowledge in that field. Consider for example the development of scientific thought on the subjects of earthquakes and pestilences: how essential to sound morality it once seemed that everyone should recognize these disasters as punishments for human wrong-doing. Yet has anyone ever been seen who, having once acquired a scientific understanding of geology and bacteriology, subsequently reverted to regarding those misfortunes as manifestations of divine wrath? If,

then, there is an irreversible trend toward the expansion of the areas of scientific knowledge, the fact that a given field has not yet been thoroughly cultivated does not justify failure to prepare young people to think scientifically about it.

There are some however who still deny the possibility that social science can ever become much more adequate than it is today. The Harvard Committee on General Education, for example, doubts "whether the scientific attitude is in truth applicable to the full horizon of life," and observes that since "every society is to a degree unique . . . the student of social phenomena is still baffled in his search for strict uniformities." [3] If these misgivings referred only to the present moment any social scientist would share them, but the context indicates that the Committee is saying that social studies can never be quite scientific.

There may be non-logical as well as logical reasons for an anti-scientific bias. Lyman Bryson, in a diatribe against "Writers: Enemies of Social Science," persuasively expounds the notion that their antagonism is a consequence of the previously mentioned tendency of scientific thought to pre-empt more and more of the territory that used to be their private hunting preserve. Bryson observes that "The artist's own statements are, in his own opinion, true. That they cannot be true in his sense and also precise in the scientific sense is a fact that he finds distasteful." [4] Reluctance to lose the prestige of being the only authorized explainers of human behavior and to have to confess that some of their explanations might fail to pass the rigorous tests of science can be found lurking beneath some humanists' rhetorical demonstrations of the absurdity of social science.

Nor are such motives by any means confined to those who professionally cultivate the humanistic studies. Everyone is to some extent his own expert on social matters and understandably resents being told that he cannot be a competent expert until he has learned to use tedious techniques for discovering "strict uniformities." The crucial difference in this regard between the layman and the professional humanist is that the former is frankly a crude empiricist while the former's crude empiricisms are largely borrowed from his predecessors and clothed with the dignity of being part of a great scholarly tradition. At this point it must be confessed, however, that the character of many introductory courses in social science gives some ground for the popular belief that social science consists in saying in four syllables what everybody knows in one or two syllables. In an effort to develop an "objective" examination for first-year students, a committee of sociologists from several American colleges recently discovered that many of the questions were answered about as well at the beginning as at the end of the year's course. What this demonstrates is that there is room for improvement in social science and its teaching. We do not advocate that a community engage an Indian medicine man to care for its sick just because the services of its present physician are inadequate.

An economic determinist might ascribe the professional humanists' anti-scientific attitude to fear of losing their source of livelihood, but that fear certainly need not exist. Interest in narrative poetry did not disappear when the factual bases of some of the classic epics were undermined, nor did Daguerre's invention condemn all painters to starvation.

One might gather from current pronouncements by spokesmen for both sides that it is a life-and-death struggle between humanists and scientists for exclusive possession of the educational system. Norman Foerster deplores "the triumph of a philosophy based wholly on science, a natural monism of which the basic dogmas were not and never can be demonstrated by science." [5]

Part of the controversy seems to stem from the habit of denying that social science can do what its more careful devotees would never think of claiming that it can do. Foerster, to be sure, goes

[3] Op. cit., pp. 40, 60.

[4] *Saturday Review of Literature*, 28:10 (October 13, 1945).

[5] *The Humanities after the War*, Princeton, N. J., Princeton University Press, 1944, p. v.

on to point out that the villain is not really science itself but a philosophy based "wholly on science." Unless one is careful however he may jump to the conclusion that what we need is a philosophy incompatible with science. It is still more confusing when Dean Roscoe Pound challenges the assumption "that the social sciences are or can be such as the physical and natural sciences are; that ultimate truths as to economics and politics and sociology are impartable by teaching. . . ." [6] Surely only a tyro could expect social science to yield ultimate truths; and when for that matter was the ultimate truth as to physics revealed?

The squabbles of social scientists and humanists are reminiscent of the late Nineteenth-Century battle of theologians and biological evolutionists, though the analogy is not perfect. Their quarreling should cease if both parties would squarely face the fact that science is concerned with means and the humanities with ends, and the corollary fact that they are complementary to each other. Where the physical sciences are involved, it is pretty well recognized that means without ends are useless and ends without means are unattainable dreams; but the matter is thoroughly beclouded in many discussions of social studies. To quote the Harvard Committee once more:

> Even if it were true that science is concerned with means only, it would not follow that science ignores the intrinsic worth of man.[7]

This passage is rather an affirmation of the intrinsic worth of man than an elucidation of the function of science. To personify science and state that beneath her harsh exterior she has warmly philanthropic impulses is like saying that the surgeon's scalpel shares the patient's pain and fervently hopes he will soon recover his health.

Which brings us to the internal enemies of social scientific education. Calling them enemies does not imply that they are setting out with malice aforethought to injure their colleagues; on the contrary they are striving to strengthen the position of their disciplines in the curriculum. But they injure their cause by taking one of two extreme positions regarding the interrelation of science and ethics. First there are the exponents of "scientism" whose prototype was the atheistic and perhaps apocryphal astronomer who solemnly reported that there is no God because he could not find him with his telescope. We need scarcely dwell longer on the error of his ways than to notice that he may have been a perfectly good scientist as long as he dealt with matters appropriate to scientific study. His present-day counterparts are the college teachers who delight sophomores and horrify pious members of boards of trustees by their specious demonstrations of the absurdity of all normative judgments and the worthlessness of all social institutions. At the other extreme, and more numerous because their metier requires less superficial wit, are the teachers who substitute moralizing for objective analysis, or mix the two indiscriminately. Economics as it is often taught was well described in a recent book as "a judicious mixture, not always acknowledged or even realized, of factual objective study and normative judgment;" [8] and the same could be said of courses in many other subjects. Actually both the moralizers and the anti-moralizers arrogate to themselves as scientists the power to make normative judgments, and thus deserve the contempt of genuine scientists and the disapprobation of humanists.

Most of our argument thus far has been directed toward a clearer distinction between social science and other disciplines concerned with social data. But the title of this article refers to general education, and in view of the demand for better integrated curricula, someone may possibly wonder whether the conclusion is to be that social science has after all no proper place in general education, or whether the writer of this article is now recanting his recent assertion that liberal education is too much compartmentalized.[9] On the contrary, there is indeed greater need than ever for formal educa-

[6] "The Humanities in an Absolutist World," in *The Humanities after the War*, op. cit., pp. 21-22.

[7] Op. cit., p. 49.

[8] Ibid., p. 61.

[9] "The Liberal College in a Secular World," *Journal of Higher Education*, 17, pp. 71-81 (February, 1946).

tion which will help in seeing the world as a whole and not as a heap of unrelated bits and pieces; and the world is now so complicated that it cannot be so seen without two different kinds of ability. These are the ability to perceive and think about things with rigorous objectivity and exactness, and the ability to make consistent and satisfying ethical and aesthetic judgments. Since the world is to be subjected to both of these processes, one needs to learn to apply the methods of the scientists and those of the humanists to the same subject-matter, and to learn when to use each one.

Rigorously objective and exact — that is, scientific — thinking about social relationships is increasingly necessary as these relationships in a great society become increasingly indirect and impersonal. Likewise formal training in matters of ethical and aesthetic judgment is needed more in proportion as the individual is more emancipated from authoritarian tradition. Finally, the processes of objective analysis and subjective appraisal must be related to each other. It is fruitless to study a situation scientifically if one then proceeds to reach a moral judgment about it on the basis of an unscientific conception of the same situation. In other words, one needs to know how to think and what to wish, and how to think about what one wishes. The third item is the troublesome one.

In the usual practice of curriculum-making it seems to be assumed that if ends and means are taught in separate departments the learner will automatically relate them to each other. With those rare students who are already equipped with unlimited curiosity and unusual insight, this may actually happen. And at advanced stages of training, graduate students who have their professional objectives clearly in sight may voluntarily apply themselves to studying techniques without having to be told at each step that the techniques will later be applicable to problems which they will face. But for the vast majority of those who ought to be generally educated the relationship needs to be made explicit. In the case of the average high-school and college student the teacher's main task should be to arouse his desire to learn by showing him that the subjects taught are relevant to their personal lives. The danger with regard to the social sciences is that in the attempt to accomplish this the teacher will make his teaching unscientific.

Social science teachers are always under strong temptation to step out of their official roles and deliver curtain lectures on questions of good and evil. Thus economists have been known to denounce the rapacity of capitalists, political scientists to extol the virtues of the Republican Party, and sociologists to advocate (on moral grounds) monogamy or prolificness. These are things in which anyone has a right to be interested, and students enjoy discussing them in terms of their own moral preconceptions. Social scientists of course ought to be engaged in showing their students how they can study with scientific detachment the factual premises on which their moral judgments rest.

Conversely, the teacher whose literary or philosophical training has heightened his sensitivity to ethical and aesthetic values often presumes to speak ex cathedra on the social means of achieving the ends which he judges to be good — questions on which the social scientist should be called in as an expert.

As a result the student fails to recognize a moral problem or a scientific problem when he meets one. Various of the current experiments in general education seem unfortunately destined to perpetuate or even aggravate this state of affairs, by making a virtue of the tendency of both scientists and humanists to exceed the limits of their competence. The purpose is a good one — to show the students that the data of social science need to be taken into account in making ethical choices; but the purpose is not served by confusing the two. An extreme case of the frustration of social science is the practice, deliberately adopted by a few institutions which stress integrated education, and followed as a matter of economic necessity in others, of requiring the same teacher to be simultaneously or alternately a scientist and a humanist.

But if every student needs to study both scientific and humanistic disciplines and their interre-

lations, why should not every teacher be made to teach in both fields? The answer is obviously that it is a full-time job to be either a competent scientist or a competent humanist, sufficiently competent to teach at the secondary-school or higher levels. The students, on the other hand are not preparing to be professional scientists or humanists, but need to comprehend what each of those persons is saying and what kind of things he is competent to say. It follows that the teachers in each field need to be aware of what those in the other field are talking about and must consult with each other when they deal with common subject-matter. But they must not feed their students a cloudy emulsion of scientific water and humanistic oil.

When social scientists and humanists get acquainted with each other and recognize the legitimacy and necessity of each other's distinctive ways of looking at the world, the millennium may arrive and the average person may neither expect social science to tell him what he ought to want nor humanism to tell him how to organize society in order to achieve it. Then also, persons of different nationalities and classes, with different individual ethical and aesthetic standards may turn to social science to discover ways of living on the same planet with a minimum of mutual injury and a maximum of mutual satisfaction. Only thus can civilization begin to catch up with the world we have to live in.

If this sounds like a grandiose conclusion, let us recall that the very idea of general education is grandiose for it contains the premise that we know enough to try to teach our juniors how to live. And that, as every parent sooner or later finds out even without recourse to social science, is a big assumption but one we are obliged to make.

Patterns of Courses in General Education

BY W. W. CHARTERS

I SHALL describe my own definition of general education and indicate how I identify the differing curricular patterns of general education. I shall not try to prove which is best. Though I have my own emphatic preferences, they are based upon personal judgment rather than upon scientific data. Many years will pass before objective proof of the superiority of one pattern over another will be discovered.

In controlling my confusion as I watch the formulas for general education emerging from the press, I begin with a homespun description of general education which runs as follows: "General education is concerned with the mastery of those cultural tools which are of most importance for the common man."

This collection of abstract words is, however, useful only after analysis is applied to it to expose the implications of four phrases.

The first essential phrase is "*the common man.*" To define this term with accuracy and dispatch is difficult, and the effort leads us to use other more abstract terms. To list synonyms is more useful. Sometimes he is called a *layman* to distinguish general education from vocational education or its more aristocratic relative, professional education. The common man is sometimes referred to as the *citizen* although this term bears a political connotation, a citizen of the state, and is therefore not so inclusive. Some draw a distinction between the common man and the *educated man* but this distinction does not hold if we assume that the common man should be an educated man unless we agree that to be educated one must go to college (and that is a shaky position to maintain). Others contrast the *cultured man* with the common man but the contrast is difficult to describe and is purely academic if we hold that the layman should be a cultured man whatever the meaning which we agree to ascribe to culture. No one can securely maintain the position that a college education guarantees the high culture of its graduates.

Rather, *the term implies those aspects of experience in which every man must participate by virtue of the fact that he is born with certain biological and mental characteristics and into a society composed of other individuals with whom he must live with satisfaction to himself and them.* The professional man and the expert, however esoteric their occupations are, have certain extra-vocational needs, interests and responsibilities which are born of the fact that they are primarily men and secondarily experts. This common extra-professional area is the province of general education.

The second phrase that needs analysis is "cultural tools." Of these there are three types.

Those of us who studied our psychology at the turn of the century will recall the old phrase: The tripartite division of the mind into intellect, feeling and will. Argument there was about whether these were divisions of the mind, aspects of the mind or whatnot, but the concepts were identified as sufficiently different to aid analysis.

More recently the evaluation experts in their probing to measure all aspects of the maturing child have unconsciously (as far as I know) hit upon the same three aspects of the process of education that the psychologists used a half century

ago. Only they have given them different names. The measurement people speak of information (intellect), attitudes (feeling) and behavior (will). This phraseology has been useful to me in resolving some of my confusion in matters curricular as they relate to cultural tools. General education is interested in the mastery of those facts, attitudes and patterns of behavior which are of most importance for the common man. There are certain obvious things which all children in an American society must be able to do, whatever occupation they may follow in later life.

Behavior is a very loose term which is roughly synonymous with many other words in the family. There are certain important skills to be mastered of which the three R's and correct grammatical expression are illustrations. Certain abilities are useful such as the power to think logically and creatively. There are also certain habits that are extremely useful when situations frequently recur. Activity programs are current. Conduct is said to be as important as, or more important than, knowledge or attitudes. All these are illustrations of synonyms of behavior that are used as they are needed. But in each case, general education is concerned with teaching the young layman to do, as well as to know and to feel.

Facts also constitute a class of cultural tools. At enormous expense of time and effort, our ancestors, remote or near, have established much information that is indispensable to the common man. One need not labor to discover illustrations because whatever pedagogical doubts there may be with regard to the importance of attitudes and behavior in education, teachers are persistently fact-conscious. They know that there are important facts to be taught in geography, in history, in science, in health and in every area of the curriculum.

Attitudes constitute the other type of curricular content and this term, like the others has a very loose connotation. General education is said to be concerned with certain fundamental values which act as mainsprings and controls of behavior. Toward these the attitude of children should be favorable. Emotions and feelings are likewise significant and must be realized or controlled. A philosophy of life dominates behavior in certain circumstances. Character development begins with attitudes toward fundamental values, utilizes information and results in behavior. These are a few concepts among many that emphasize the emotional aspects of the life of man. And again, they are the concern of general education.

The third phrase to be selected for comment is "of most importance." This must be watched because it is the most potent cause of confusion in defining curricular patterns. This is obvious when we seek an answer to the question, "What are the most important facts, attitudes and patterns of behavior for the common man?" Educational research has not found the complete answer. It can assure us about the most common words in spelling or French but it cannot grade the relative value of initiative and security, of science or literature or foreign languages or consumer education. These are matters of judgment supported by experience or a philosophy of education or local social needs, but still subjective. We should expect, therefore, what has happened. In our free democracy of education we shall not soon find complete agreement about basic curricular patterns nor about subordinate patterns within the major types.

The fourth element of the definition is the word, "for." Its significance is high-lighted by contrast with the word, "to." "Of most importance to the common man" implies "most interesting to him." General education is then concerned with what he wants to know, is interested in doing, thinks is most valuable. "Of most importance for" implies need. General education is concerned with what its students need rather than merely with what they happen to be interested in. Need and interest are not only not synonymous, they produce widely different methods of building curricular patterns.

This analysis helps to identify *three types of course* if not curriculum. There are those in which the *mastery of information* is the primary objective. In such courses it is assumed that certain skills and methods of mastery will be gained and certain attitudes and values will be developed. This

is the most common type of college course. There are others in which the *development of attitudes and feelings* are the primary objective. Immediately one thinks of the appreciation of music. And there are others in which *behavior, action, and conduct* are primary. Of these there are many examples such as activity programs, projects, laboratory courses, and the like.

It is difficult to find pure types of information, attitude and action courses. The three elements are probably used in all courses. The mastery of a practical course implies the learning of skills and abilities and at least assumes favorable attitudes on the part of the learner. The classification must rather be made upon the basis of emphasis upon one or the other or upon all three equally. But one has little difficulty in finding many examples in which emphasis is striking enough to differentiate the types.

Turning now from the definition to an examination of current major patterns of curricula in general education we begin by saying that two major patterns can be identified in American schools and colleges: subject patterns and need patterns. These in turn include sub-patterns as either information, attitudes, or behavior are considered to be of primary importance. But composite patterns are commonly found in which instructors who use one basic pattern supplement this by the use of the techniques developed in another pattern. The teacher committed to the subject pattern, for instance may pay attention to the practical needs of the student and he who is committed to information as his primary concern may attempt to develop attitudes and establish habits.

Let us elaborate the ideas in the foregoing paragraph to identify some of the current curricula and courses by first analyzing the subject concept.

The subject pattern has been developed by educators because they have believed in three assumptions. First, the cultural tools which are important enough to be included in the educational Hall of Fame, known as the school curriculum, are found in the so-called fields of knowledge. These areas have invited the attention of galleries of able men, both ancient and modern, who have sought with industry and intelligence, to discover, test and organize significant matters within each field. The product of the labor of the scholars is of paramount importance in training youth to take up its responsibilities.

Second, in mastering these subjects the student acquires useful information and practical fundamental principles. He develops important attitudes and values by his introduction into the world of the scholars and by contact with their ideas and outlooks on life. He also learns skills and develops abilities extending from the cleaning of test tubes to the organization of knowledge into a philosophical system.

Third, when he has gained such information, skills and attitudes in a subject he can transfer them to his practical life as a layman. Certain remembered facts will be useful, certain habits will be available, the system of values that he has mastered will operate in everyday affairs.

We are not concerned about the validity of these assumptions in describing the subject pattern. It is only necessary to identify them as bases for action by those who use the subject patterns.

When we come to grips with the use of the subject mastery concept in the junior college years, we are overwhelmed by the problem of selection of the subjects which are most useful to the student in his extra-professional life. The number of subjects is enormous and for mastery, years of study would be required, while the student is expected to complete this general education in sixty semester hours or less. To meet this situation, three sub-patterns have been evolved.

First, half a century ago, following the lead of Harvard's President Eliot, the free elective formula was developed. This permitted the student to select his subjects as based on his own judgment concerning his interests and needs. For a variety of reasons this system did not receive wide acceptance in American colleges and in its original form it is of only historical interest.

A second solution is the formula used by the majority of American colleges at the present time.

This is the sampling formula. Its derivation rose from the following line of reasoning. The student cannot master all subjects, but he can at least gain experience in all of the major families of subjects. We shall therefore classify courses into divisions composed of areas which are related in information content or techniques of investigation. Then we shall require acquaintance with all these major fields but allow the student to select the course within each which he needs or wants.

To implement this idea, college curricula are organized in divisions which commonly include the following areas: the physical sciences, the biological sciences, the social studies, foreign languages and English Composition. However, while this general pattern is followed, variations are numerous since each college prescribes its own required areas. Some add the humanities and variously define the included courses. Others do not require foreign languages. In still others, psychology appears sometimes as a biological science and sometimes as a social science. Uniformity is noticeable by its absence.

Colleges which follow this pattern enroll students in elementary courses in the various specialties. The biological science requirement is fulfilled if a student carries a beginning course in botany, zoology, biology, physiology or whatever the college lists as belonging to the division. Sometimes, however, a student is excused from taking a course in a division if he presents evidence that he has mastered the field in the high school according to high school standards. For instance, no foreign language may be required in college if the student has completed certain languages in high school.

A third pattern is the survey course. The line of reasoning that has resulted in this form is similar to that of the sampling form in that both assume that general education should include acquaintance with the great divisions of knowledge. But they differ in that instead of providing the student with many beginning courses to sample, the division offers an elementary course in which the cultural contributions of the divisions are presented as an organized unit. A student is introduced to a course in physical science rather than one in chemistry, physics or geology as permitted by the sampling formula.

Historians may tell us that the survey course is a new form of the common pattern of college courses prior to the era of specialization. They may say that when college professors began to specialize in narrow fields they did not feel competent to cover a wide range of related fields and so invented beginning courses each in his own field. However this may be, the current forms of survey course began to be noticed about 25 years ago when John Coos and Herbert Hawkes initiated the Columbia University course in "Contemporary Civilization" and Louise Dudley at Stephens College developed her course in the "Humanities." Rather rapidly the idea has gained popularity as evidenced by the fact that in one of its "quick surveys" in 1940 the *Journal of Higher Education* learned from its correspondents that more than 150 such courses were being experimented with in the standard colleges of the nation. More recently Harvard University has joined the group.

The survey course is found to have two varieties. One of these I call the mosaic type. This is what the University of Chicago's "Nature of the World and of Man" would be called. Its formula is to include in the course a discussion of each of the selected fields in the physical and biological sciences in serial order — a separate unit devoted to each. The second variety is the integrated course in which the principles common to several fields become the backbone of the course and illustrations from the fields are used to show the basic unity of the area. Stephens' "Humanities" and Columbia's "Contemporary Civilization" nicely represent this type.

The needs concept provides an approach to general education from a different direction. Those who have developed this pattern proceed upon the assumption that the most effective method of educating the common man is to identify and classify his basic needs, problems, activities, interests and select from the inherited culture of the race those

facts, principles, skills, attitudes and values which will most efficiently aid him in dealing with these matters.

The contrast in the resulting curricular patterns is illustrated in the social studies area. The subject pattern of courses is made up of beginning courses in sociology, economics, political science. The needs pattern selects activities such as voting in a democracy. The important and persistent issues upon which the citizen must be informed to vote intelligently become the "chapters" of such a course. The content of the chapters consists of facts, principles and points of view treated in sociology, political science and economics, as well as other areas, which provide the data on the basis of which the selected issues are decided. The subjects of sociology and political science are not studied as such.

The utilization of this pattern of prescribing courses, important enough to be required, results in a group of courses which differ in function from the subject pattern. For instance, need-derived courses include such areas as being an intelligent citizen, maintaining health, getting along with others, communications, and developing a philosophy of life. Since these are important activities of everyone, they command major attention when the needs formula is used.

The needs pattern with which I am most intimately acquainted, the Stephens College curriculum, was processed by the collection and classification of the activities of American women. From these groups seven areas were selected as basically important to all women.

1. Communications, involving the ability to read, to write, to converse and to listen.
2. Psychology, whose objective is to assist women to adjust themselves to other people by understanding the motives, mores, prejudices, interests and abilities of themselves and others. This is a course in clinical rather than systematic psychology.
3. Health, involving a knowledge of the physical processes and defects of women and the methods and principles by which these may be controlled by education and therapy.
4. Consumer problems, intended to teach women how to expend money and effort wisely and legislate for the improvement of the status of the consumer.
5. Social problems, involving a balanced study of those social, economic and political problems with which the citizen must come to grips if a democracy is to function effectively.
6. The humanities, intended to teach women how to appreciate art, literature and music and to become acquainted with the best products in these fields.
7. The philosophy of living, which involves the ability to integrate the experiences of the preceding twenty years of school life of each student around fundamental values and points of view.

Some modifications of this pattern have occurred since 1920 but they do not need to be detailed here.

We should point out again the weakness of the procedures needed to arrive at *the* list rather than *a* list,and thereby, avoid confusion. This selection was made by a faculty group upon the basis of its best judgment. This means that other investigators might produce a different list. And indeed, they have. Ten years ago the literature contained over three score studies. All accepted the needs approach, many differed in the details of their lists but in general all were merely varieties of a common genus. And as experience grows, a greater consensus will develop over the years.

Within the needs patterns three forms appear — the individual, the social, and a combination of the two. The individual sub-pattern of the needs pattern uses the idea that the curriculum of an individual is based upon his particularized needs, interests and abilities. In theory, each student pursues a curriculum which is tailormade for him. This pattern is used by a substantial number of so called progressive schools as reported in the literature.

The social sub-pattern is based upon the analysis of the common activities of the society in which the school is situated and the selection from them of the areas which are of major importance. Stephens College used this pattern when it surveyed the activities of women situated over the nation and selected its major areas from this material. This is the variety most frequently found among needs courses.

The individual-social pattern — to invent an adjective — begins with the social approach and having identified the problems and needs within an area relates them for purposes of motivation to the current interests, problems and needs of each student working to master the area. Each student is expected to start from his own problems and interests and widen his interests until the area is covered. Again Stephens College attempts to follow this pattern.

The following schematic outline has served me as a basis for identifying types of curricula and courses in general education.

1. Psychological patterns
   - 1.1. The acquisition of information, knowledge of facts, principles.
   - 1.2. The mastering of attitudes, emotions, values.
   - 1.3. The development of skills, abilities, conduct, behavior, action.
2. The subject pattern
   - 2.1. The free elective pattern by which the student makes his own selection of courses.
   - 2.2. The required major divisions of culture.
   - 2.21. The sampling pattern by which the student makes his own election of beginning courses within required divisions.
   - 2.22. The survey patern which assembles the contributions of the whole division and teaches them in a unitary organization.
     - 2.22.1. The mosaic pattern in which each field within the division is treated separately in serial order.
     - 2.22.2. The integrated pattern in which the course is organized around the common principles, techniques or problems prevailing in the division and draws upon facts and principles in the division without identifying subject lines.
3. The needs pattern
   - 3.1. The individual pattern in which the curriculum for each student is based upon his own needs.
   - 3.2. The social pattern in which the curriculum is based upon the important needs of the common man in his social setting.
   - 3.3. The individual-social pattern in which the social pattern is modified in teaching by beginning with the needs of the individual and proceeding to cover the area.

The Challenge of General Education for the Secondary Schools

BY GORDON N. MACKENZIE AND HUBERT EVANS

EDUCATORS are becoming ever more thoughtful about general education, more constructively critical of the proposals made in its name. Increasingly, secondary schools are taking general education seriously. Colleges are reconsidering their programs in the light of their interpretation of the current movements in general education. Public discussion about some of the important issues in general education is steadily growing. In short, it appears that the general education movement is coming of age, is becoming respectable. And it is well that this is so, for much confusion, conflict and misunderstanding still exist, hampering and retarding the rational development of the general education movement.

This article is intended to be provocative rather than definitive. It seems most important at this time to raise questions, bring issues to the surface, define problems, challenge assumptions and hypotheses, rather than to attempt to describe in detail a program for general education. Unless basic issues, problems, and assumptions are clearly understood and recognized no effective program can be built. Changes in structure of the school and changes in the organization of learning experiences should follow the development of a point of view. The position taken in this statement is that every secondary school must develop its own general education program with its indigenous characteristics. Thus, every community should participate fully in the formulation of its program. The major purpose of this article will be achieved if it helps teachers and others concerned with the design of the secondary school program to think more clearly, more rationally about the general education movement in relation to their own problems in their own schools. The discussion that follows points out some of the major confusions and misunderstandings and goes on to suggest some elements that should be included in a more adequate point of view for general education.

CURRENT CONFUSIONS, CONFLICTS, MISUNDERSTANDINGS IN GENERAL EDUCATION

A certain amount of confusion and conflict is inevitable in any growing and developing social movement. General education is no exception. From its inception the general education movement has been misunderstood, misinterpreted, misjudged as to its nature, purposes, direction. Frequently general education is accepted or rejected uncritically. It deserves better treatment at the hands of those who are active in its support or rejection. Terms often associated with the movement have been lifted from another context and, unless defined carefully when used, tend to prevent people from communicating easily and understandingly. Resistance from teachers and others with vested interests in subject areas and fears of teachers who view the general education movement as a threat to their security increase confusion and conflict. The failure on the part of both advocates and opponents of general education to sense the importance of people has been a major cause of this resistance and these fears.

General education rooted in the culture. Prob-

ably the most important source of confusion in general education is the widespread failure of workers and leaders in this field to recognize the nature and the relation of the general education movement to other cultural developments and changes. Is not general education a response to our age of increasing specialization in production and in services to our economy? Is it not a direct response to the delayed induction of youth into society as working members? Is it not a response to the century old problem in America of how to make education contribute more directly to the solution of private and public problems? Can we not perceive in the general education movement an expression of growing scientific temper of our times with its emphasis on rational goals and procedures? Is not general education another in a long line of indigenous forward-looking movements in American education? These questions are not academic, nor rhetorical. To consider them such is to miss the point, to miss the dynamic character of the general education movement, to miss its essentially democratic orientation, to miss the importance of achieving a functional historical perspective so necessary to the understanding of any important cultural development. None of these basic questions about general education in the secondary school can be answered without reference to the culture of which it is a part, without reference to its relevance to the changes and developments in our society. Can we not say that the general education movement, whatever its shortcomings as it is now formulated, represents a response to the demands that our culture is making on each youth and on all our institutions? To see general education in its proper historical and contemporary setting, to see it as a part of our cultural development is to take the first step toward clarification of one's thinking about this important movement in contemporary secondary education.

The new role of knowledge. A second source of confusion centers in and around current notions of the nature of knowledge and the role of subject matter in education. Here we have confusion not only about content but also about method and procedures as well. What is subject matter for? What is its function in the over-all development of youth? Does not the manner by which youth acquire facts, information, understanding have great bearing on the problem of subject matter? Is the current notion that there exists a body of essential subject matter, that is, essential to all youth, a valid concept? What assumptions underlie this point of view? What should be the relation of subject matter to the pressing concerns, needs, problems of youth and of the community? Can subject matter make any contribution to anything except subject matter, the logical development of a subject area? Should subject matter be used as a means to an end or as an end in itself? Again these questions are neither academic nor rhetorical. Many of them involve issues which lie at the heart of much of the confusion and conflict in general education. Many of them have been raised frequently in the past and no doubt will continue to be raised in the future. The difficulties in thinking our way through this problem of subject matter are considerable. Think for a moment of your theory of knowledge, your concept of the function of knowledge in the world today. Consider the prestige associated with certain bodies of subject matter as compared to others. Consider our excessive worship of the printed word particularly if the word concerns the past. Evaluate for a moment your notion of what is a cultured person. Is it medieval or even Victorian in outlook? Ponder a while on our highly competitive socio-economic culture and how it has conditioned your thinking about subject matter. Then compare your notions and beliefs about subject matter with what you know about children and youth, what the experts know about children and youth as they struggle to grow to adulthood in present day society. Might we not discover that the role of knowledge in education should be defined in terms of its use in promoting all phases of the growth and development of youth? Earnest and thoughtful workers in the field of general education are striving to make sense, to develop a rational point

of view with respect to the role of knowledge in education. Much of the confusion in general education will disappear as more and more educators achieve this goal. It is on this point of knowledge that current plans and concepts of general education most sharply differ. It should be emphasized that the solution to this problem is *not* to do away with all subject matter, all knowledge.

Structure of the secondary school restricts the general education movement. A third source of confusion involves the current framework of the school and attempts to fit the general education program into it. Can we hope ever to achieve a genuine general education program for all within the present framework of the school, particularly the secondary school? Can the secondary school retain its present organization of the school day, its system of credits, marks, promotions, graduation and achieve that which the general education movement promises if permitted to develop unhampered? Will not schools, their staffs and administrative officers, have to face this problem and solve it by changing radically the framework of the school? Current practices throw some light on this problem, but give little evidence that secondary schools have made any significant change in the framework of the school. This does not, of course, minimize the importance of the changes that some schools have made as they evolved their new program. May it not be possible that without radical changes in the general setup of the secondary school a genuine general education program will never mature? Experience to date seems to suggest just such a possibility.

Practice lags behind research and theory. A fourth source of confusion grows out of the failure of modern educational theory and policies, and experimental evidence from the sciences to influence practices in the schools and in the classrooms. Everywhere we find educators attempting to implement the newer theories, the new policies, the new knowledge about how children and youth grow and develop with practices based on older concepts, and discredited theories of knowledge. Everywhere educators can be found who intellectually accept the new but operate on the basis of the old. Many educators reject the new theories, policies, and knowledge outright, clinging to the old in spite of the accumulated evidence and knowledge which tends strongly to undermine their position. Of course personal values are involved here and cannot be safely disregarded at any time when change is contemplated. Can we then reduce this gap, this lag between theory and practice, between policy and current operation, between the newer knowledge, the experimental evidence and what actually happens in the classroom? Can we channel the findings of research into classroom practice? If not, general education is doomed to failure. This movement in education is surely the child of modern educational theory, policy, and knowledge.

Clarification of concepts needed for better communication. Finally, a fifth source of confusion is current terminology. Granted the sincerity of those who use the language of general education, how can a stranger or even a worker in general education make sense out of the synonymous use of such terms as core curriculum, basic education, common learnings, general education — particularly when the meaning of each term varies with the person using it? What do you mean by such terms as needs, interests, life experiences, common experiences, common needs, specialized, nonspecialized, skills, problems, problem approach, work experience, all of which are used freely in talking about general education? The need to clarify the basic concepts and to explain the sense in which terms are used is so obvious as not to require comment. Confusion is certain to continue until we do.

These, then, are some of the confusions, some of the conflicts in general education. All are in ourselves, in our culture. Yet the means for resolving these confusions and conflicts are also in ourselves, in our culture. Can we recognize, organize, and use these potentialities to help us move ahead toward a genuine democratic general education for all? Perhaps some further consideration and discussion of the nature, possibilities and char-

acteristics of general education will aid us in this task.

A MORE ADEQUATE POINT OF VIEW FOR GENERAL EDUCATION IS NEEDED

In the preceding discussion it is assumed that general education is a genuine and challenging movement in education. Issues, problems, confusions were presented first for a purpose. Behind this purpose lies a belief that a sense of direction for general education should be derived from a critical examination of the issues, confusions, and problems in education and in the culture, for indeed the two are inseparable. Criteria for judging the adequacy of a point of view for general education, although of first importance, are often overlooked or underemphasized. Does the point of view reflect a response to current educational problems, to current social problems, to social change? Does the point of view take into account current knowledge, experimental evidence and hypotheses about the growth and development of children and young people? Does the point of view reflect the basic issues in education and suggest a way to their resolution? Other and perhaps more important criteria could be mentioned. The emphasis here is on current cultural developments, on changes whatever their causes may be, on the current social scene, for if general education is a genuine movement in education it is also a genuine social movement. Criteria for judging the adequacy of a point of view for general education, then, must be derived from present day cultural developments — educational, social, ethical, technological, economic, political. This is the real test of its adequacy.

With these criteria in mind let us examine what seems to be emerging as a point of view for general education. What are the major characteristics of this movement? What appear to be some leads that have promise for resolving confusions and issues that now prevail.

General education should be viewed as a continuous program of life experiences for all children, youth, and adults; life experiences that focus on common needs, common interests, common problems. General education is not thought of as opposed to specialized education that focuses on special needs and interests. The two are interrelated and parts of the total education of an individual. Common needs refer to those needs which all have in common to a greater or less degree. Common interests and common problems are thought of in a similar manner. "Common" does not mean identical nor does it imply the same learnings, the same achievement for all. It suggests common desirable directions of development for the welfare of the individual and the citizen in a democracy. The general education movement should in no way be confused with the older 3 R's type program. The differences in point of view between them precludes such confusion when the differences are clearly understood. Life experiences are thought of as those experiences which have validity for the individual, those that he accepts and incorporates into his own world, his own personal frame of reference. The emphasis on a continuous program of general education is a direct response to current knowledge concerning optimum conditions for learning. As the school encompasses only a fraction of the total learning experiences of an individual, it is necessary that the school learn to work and plan with all social agencies interested in a coordinated program of education. Constant cooperation and planning between elementary and secondary schools, between the school and the family, between the secondary school and the colleges, between the school and other community agencies, between community agencies other than the school, seem imperative if the full potential of the general education movement is to be realized.

General education should be concerned primarily with people and only secondarily with knowledge, skills, techniques. Emphasis on people strongly suggests that the secondary school shift in large part from a knowledge-organized program of education to one focused on the problems, on the importance of people as individuals and as groups. Implicit in this emphasis on people is a direction for resolving the confusions and issues, concerning the role of knowledge in education. The signifi-

cance of this point should be clear. Knowledge for the sake of knowledge, knowledge "stored up" for future needs, skills and techniques learned in isolation and seldom used in life situations are no longer an adequate basis for developing children, youth, and adults capable of living effectively in their respective worlds; no longer effective for promoting group welfare in a highly technical and industrialized society. The value and need for knowledge, skills and techniques is not denied. Rather their value will be enhanced when used as a *means to an end* — the fullest development of human potentialities, the fullest development of group welfare. It should be pointed out here that the emphasis on concern for people is neither away from nor toward the child-centered or the society-centered school of the past or present. Rather it represents a new synthesis of both on a different level.

Underlying this emphasis on concern for people is the persistent and long-time effort on the part of many to humanize knowledge, skills, techniques, methods of thinking, ways of working; a long-time effort to develop a functional educational program *for all.* This persistent effort represents a continuous response to the democratic insistence on the worth and dignity of the individual, on the central importance of the welfare of the group. It is supported today by a growing realization of the importance of people in our scheme of values, by the challenge of events to get our values straight and operating on every level of experience, by the crucial importance of solving our pressing problems in terms of human welfare, here and now.

General education should accept as its chief responsibility the development of individual and group personality patterns that will free intelligence, and enable all persons to operate rationally in situations where choices and judgments have to be made.

Obviously concern for personality development is closely related to concern for people. By personality pattern we mean one's own frame of reference to which all personal experiences and events are referred. More often than not, it is a complex of attitudes, exclusive faiths, loyalties, mysteries, dogma, fears, and guilt. One's personal frame of reference is the funnel through which intelligence must operate, if it operates at all, as the individual makes his way through the surrounding sea of events in which he is involved. Freeing individual intelligence requires constant reconstruction of one's personal frame of reference. Freeing group intelligence requires the constant reconstruction of the group personality pattern. Freeing intelligence is a basic educational task. It involves working with individuals and groups to help them to break the bondages of beliefs, dogma, fear, and guilt resident in their frames of reference. It means helping individuals and groups to observe, to reason clearly, to reach and put into operation decisions appropriate to the real situations in which they find themselves. Underlying this stress on free intelligence is the belief that intelligence is man's only specific means of survival; a belief that the fullest use of individual and group intelligence is an essential requisite for man's survival in a world where atomic energy is a reality; a belief that in no way other than freeing intelligence can man reach maturity and modernize himself. In short, without the fullest development and freest play of intelligence in *all areas of human experience,* man has little chance to survive in a world now dominated by science and technology where intelligence has almost unrestricted freedom. The course of world events, we believe, supports this position.

If we as educators take the responsibility for helping to free the intelligence of children and young people and for the development of more effective personality patterns (and how can we avoid doing so) then we must face certain facts, certain issues, accept certain tasks. The following seem to be the most important at this time.

The fact of personality patterns. From the operational standpoint, the fact of personality pattern and its relation to the development of intelligence only too rarely enters the classroom situation as a living, a dynamic concept affecting our work with children and young people. Acceptance of the reality of the intimate relationship between

the individual's frame of reference and his intelligence should condition every step we help youth to take in the learning process, every aspect of the learning situation we try to create, every phase of our relations with individuals and with groups. Acceptance of the responsibility for the development of effective personalities and for freeing intelligence means never looking at a child or young person as just another boy or girl but as an individual with a set of values, a personality pattern, conditioned by experiences in the home and community. It means acceptance of each as a distinct personality. It means going slowly with the application of any "normal" yardstick as a method for evaluating growth, for evaluating achievement. It means cooperatively creating standards for each individual. It means providing opportunities for a wide variety of experiences. It means the wholehearted acceptance of children and young people into all phases of the educative process, recognizing their right to accept or reject experience, to invent, to discover experiences appropriate to them. It means helping children to build needed conformity out of experience, reason, intelligence rather than out of imposed rules and precepts.

The fact of universality of change. Change is a basic characteristic of life, of growth and development. The completely fixed, the unalterable, is rare if not nonexistent in nature, in human beings, in human society. Stability is hardly ever more than relative and is often dependent on controlled and delicately balanced change. Instability on the other hand can lead to chaos once it gets out of control. We see evidences of this all around us — erosion, deserted towns, frustrated people, warped personalities, mass neuroses, war and threats of war. The universality of change has important implications for the development of effective personalities, for the freeing of intelligence. It suggests that above everything else that children and young people must be helped to achieve enough stability at any given time to operate effectively in a world where change is constant and inevitable, and if controlled by intelligence, desirable. Educating, then, to achieve the fixed, the unalterable element in the basic personality pattern, the institutional status quo in society, is in the long run harmful to children and young people, harmful to society. Such education is harmful principally because it shackles intelligence, man's only specific means for survival. The alternative is to recognize the potency and inevitability of change and to help children and youth to have the kind of experiences that will enable them to achieve needed stability and balance at any given time, principally through the free use of their intelligence. The universality of change, although often a source of tensions and complex problems, opens up great opportunities to man. It makes possible the full development of his potentialities. It is a basic underlying assumption in all education.

The fact of needs and interests. The fact of private and public needs and interests seems too obvious to mention. The intimate interrelationships between needs and interests on the one hand, and personality development and intelligence on the other, seem equally obvious. Yet the fact remains that needs and interests of children and young people are more often neglected or by-passed in the classroom than they are used as an approach to helping children and young people achieve more adequate personality patterns, more adequate use of the intelligence they have. Experience, experimental evidence, and current knowledge seem to indicate quite clearly that not only do interests and needs and the way they are met have great influence on growth and development, but that needs and interests grow out of the process of development itself. This means that we must be prepared to help children and young people meet their more or less persistent needs and interests and at the same time help them to meet the new, the emerging needs and interests created by the classroom situation, by experiences outside the school.

The fact of the public or community dimension of private needs and interests. Most private interests, most private needs have a community, a public dimension. The need for security, for example, may have a public or a community dimension as wide as the world. A private health need may have

a community dimension such that to meet it effectively would require that the individual engage in a cooperative enterprise focused on a community health problem. On the other hand, a public, a group, or a community need may have a private dimension. In fact do not all public problems, all public needs and interests have a private dimension? How could it be otherwise? If this concept makes sense, then it is obvious that there is no necessary opposition between private and public needs and interests. Rather it suggests the great importance of helping children and youth to relate their private needs and interests to the needs and interests of the group and the community, and to relate the needs and interests of the group and the community to their own private needs and interests. This would mean much greater attention to group concerns and needs and to the current social scene than now generally prevails in our schools. It also demands greater stress on the individual's responsibility for maintaining the group process through which his needs can be met. Favorable opportunity for personality development and for the creation of effective intelligence must include the public dimension of private needs and interests.

The fact of lag in educational practices. The chasm that exists between classroom practices and what is known about growth and development of children and youth is a serious and perplexing problem. Changes in practices seem never to catch up with research. In fact, as the rate of discoveries in knowledge increases, the lag between research findings and their application to practice seems to grow. This is, of course, of serious consequences to personality development and to the development of intelligence, both of which are of prime importance in education. The lag between valid research findings and practice is not wholly due to the ignorance of the educators. Many of them have the newer knowledge but have not developed ways and means for implementing it in the classroom situation. A continuous program of in-service training of teachers on a nation-wide scale and a new type of emphasis on experimentation in pre-service training is needed in order to reduce this lag. This program of in-service and pre-service training would deal directly with the problems of experimentation and research at the classroom level. The lag will never be eliminated entirely until each and every teacher is involved in the research process. Good teaching, the best teaching, will then be almost synonymous with informal but none the less effective research. The lag in educational practices also has serious consequences for research. It slows up the full scale testing of hypotheses in actual classroom situations, and thus prevents the stimulation of more research that follows more or less inevitably whenever hypotheses are tested in practice. In other words it slows up, sometimes stops, the research cycle. In addition, educators often find themselves overtaken by the newer research before the previous research findings have been digested due to their failure to test the older theory at an earlier date.

The fact of issues and paradoxes in values. The fact of the enormous importance of values in personality growth or in the maturing of individual frames of reference has never been faced fully and squarely by educators, nor by others interested in shaping the lives of children and young people. It is not a question of values or no values. It is a question of what values and how they are developed that is of importance in personality development. Values permeate every aspect of human behavior, every nook and corner of one's personality pattern. They have tremendous influence over intelligence and its use in situations where practical judgments and choices are to be made. In many crucial ways, one's set of values determines how free his intelligence is how freely it can operate in situations where decisions must be made. The imposing of similar values on all is no answer to the problem. Somehow we must help every child and young person to develop his own set of values, values that will permit the maximum development of his own personality and intelligence, and at the same time draw him closer to the group. The reconstruction and the reinterpretation of values, the development of new values to meet the temper of the times is an essential educa-

tional task. It is required for the creation of adequate personality patterns; essential to the free use of intelligence.

Obviously the building of a more adequate point of view for general education includes consideration of many other elements, issues, problems, and details which have been omitted in this discussion. For example, the fact that behavior is caused, that behavior is learned, are concepts of prime importance in evolving an adequate point of view in general education. Taking into account the serious social, political, economic issues, paradoxes of our times, is also essential. The role of knowledge, the role of skills and techniques in the development of personality and effective intelligence needs further and detailed elaboration as does the role of selection, acceptance and rejection of experience by the individual.

A defensible point of view for general education, then, must grow out of all the known facts about all the factors that condition the development of children and young people. It must be developed with full reference to the present social scene, with reference to the social, economic, and political problems that pervade the lives of children and youth. Finally, no adequate point of view for general education can be obtained without full recognition of the enormous importance of values, of values that are operational. The suggestions for direction indicated in the foregoing discussion may not provide sufficient bases for an adequate point of view for general education. If not, then the search must continue, for without an adequate point of view, the general education movement will die.

The Future of the Social Studies

BY W. K. JORDAN

THE SOCIAL sciences may be defined as those disciplines which treat the wants, aspirations, and activities of man as part of the social organism. The natural sciences, it may be supposed, treat the phenomena of nature, which may be precisely and repetitively observed. In so far as the natural sciences consider man at all it is in an objective and narrowly limited context, either as an individual dissociated from his society or while observing the impact of natural laws upon him. It is true that the edges of definition between these two great areas of knowledge are no longer as precise as they once were. Hence physical anthropology, which is concerned with the accumulation of objective data regarding past man, may properly be described, within the limits of our definition, as a natural science, while the newer discipline of social anthropology, concerning itself as it does with human relations, very evidently is more akin to the social sciences.

One must observe that there has for rather more than a century existed a curious inter-relation of the social sciences with the natural. The nineteenth century witnessed an immense advance in our understanding of natural phenomena and in the perfecting of instruments for their exploitation and control. The whole temper of western thinking was profoundly affected by the dramatic advances made in the natural sciences and men came by a possibly heady impulse to the persuasion that they could apply essentially imitative methods to social and historical phenomena in the large. The consequence has been that the most idolatrous of the worshippers at the shrine of science are not scientists themselves but the social scientists — unhappy appellation — who are stricken by the probably unfounded persuasion that the infinite complexities of human affairs can be reduced to a neat and ordered design.

It is, I take it, these imitative persuasions that have caused the social scientists, particularly of the last generation, to seek to discover in human affairs a demonstrable factor of predictability to promulgate laws, or hypotheses containing the hope of laws, with which mankind could the better be ordered. It has caused them as well to unleash on the helpless data of social phenomena batteries of apparatus and research techniques conceived in veneration of the shining laboratories and gadgets of the natural scientist.

I trust that I will not be regarded as outrageously heretical when I point out that certain of the basic persuasions that have underlain the social sciences have been unsound. The methods of the laboratory which rest rigidly on the possibility of exact control, precisely predictable repetition, and a cold objectivity simply cannot be secured in the observation and analysis of social phenomena. When even the medieval historians display heat-generating emotion about, let us say, the moral conditions in the monasteries of Sussex in the year 1410, I think it is fair to conclude that none of the conditions undergirding the scientific method prevails. The scholar in the social sciences as he grows in wisdom and mastery of his discipline comes to appreciate the immense complexity of social and historical truth and comes as well to an understanding of the incredible incidence of the

unpredictable in human history. The social scientist is, I think, in the last analysis concerned with moral laws which, since they rest on such bases as tradition, inertia, and religion, do not possess content of the same order as do physical laws. The first law of thermo-dynamics stands starkly and absolutely true in any generation, in any nation, and in any culture. But social truth, it is clear, possesses no more than a subjective validity when we pass from one age or from one civilization to another.

It may be argued, then, that it is the first task of the social scientists to emancipate themselves from the self-inflicted thraldom which has bound them for so many years to an almost unworthy imitation of the methods and aims of their colleagues in the natural sciences. It may be proposed, in fact, that the social scientists ought if they are to render full contribution to a world desperately in need of wisdom to go back to the fountainhead of philosophy, whence they sprang, in order the more effectively to make their contribution to general education and to the advancement of knowledge.

The social sciences, I need scarcely remind you, are in terms of the college curriculum very recent disciplines, though they deal with a subject matter as old as scholarship itself. The educational process is extraordinarily conservative, but once it begins to move in a new and revolutionary direction it does so as if impelled by extremely powerful physical forces. The social sciences attained standing, and a little later respectability, about the middle of the nineteenth century when the traditional classical-theological curriculum was at last broken.

History, government, and economics, the great social sciences which today are the fields of concentration for almost half our college students, are then of very recent origin as distinct areas of instruction. An immense expenditure of time, of research outlays, and an almost incredible proliferation has marked the rise of the social sciences in the past century. Yet I would venture the suggestion that the three disciplines had attained full intellectual content and that classical contributions to their development had been made in the period before they became fully recognized as separate fields of learning. All three of them had for some centuries past been part of an area of knowledge, of instruction, and investigation which is possibly best described by the title, social philosophy. A strange and dangerous decay has occurred in their value as educational disciplines and in the quality of scholarship in these fields of knowledge as the process of proliferation has gone on — a process that has become increasingly intricate as ever-narrowing specialties have been developed within the several disciplines.

It is fair to say that until about the time history, government, and economics were firmly established as separate disciplines, the educated man generally and certainly the scholar possessed a synoptic and a remarkably adequate grasp of historical and social processes and that writing about these processes was enriched and strengthened by a consistent frame of philosophical reference. It is for this reason that men like John Locke, or Adam Smith, or John Stuart Mill, or Bishop Stubbs, or Karl Marx could make contributions of the first order to our understanding of the whole of the social and historical process and that their work could so immensely illumine all the fields of knowledge under discussion. These scholars are gone, these teachers are gone, and I am not persuaded that we can take refuge in the explanation that the sum of our knowledge has advanced so vastly in the past sixty years that the human mind can no longer bring it under the discipline of a ranging imagination.

In fact, it was within our own lifetime that these disciplines broke away completely from their essentially philosophical origins and hence ceased to serve as vessels for general education and no longer inspired the basic research and writing that marked their early development. Until about the turn of the century these subjects professed a common devotion to history and they were all immediately concerned with the destiny of man, which is philosophy even though it is not taught in a philosophy department. Thus every depart-

ment of government until about that date was built around the central core of knowledge of political theory and jurisprudence; the great weight of instruction and research in economics lay in theory and in history; while in history proper the canvass of instruction and writing was broad and the unfolding of a great Whig interpretation of history lent a philosophical foundation to the study and contributed vastly to the process of liberal evolution and to profound convictions about the merits of the liberal way of life. I am saying, in brief, that all these disciplines had not yet cast off the mantle of social philosophy, that they were concerned with first principles and with the destiny of man, and that they remained magnificent instruments for general education.

But during the past decade or so the synoptic principle has been lost, research has tended to degenerate into the narrrowest of monographic channels, and the values for general education have been gravely damaged. In government, political theory has all but disappeared together with any sense of institutional development. Instead we observe an increasing emphasis on administrative processes, on narrowly conceived techniques, and on watery surveys of current events. In economics, too, the theorists and the systematic thinkers are all but gone and we have observed within the discipline an incredible spawning of specialties to the point that, with the possible exception of chemistry, economics has become the most vocational and the most highly specialized of all departments. So far has this process gone that the typical department of economics contains its cults and schisms, with the result that a really strong department must in the present day contain three rival professors presenting their rival systems of, let us say, money and banking. History has suffered least because of the inherent conservatism of the discipline and because, happily, it is free from the possibility of immediate utility in the market place. None the less, research has become increasingly monographic and intensive specialization has filtered so far into teaching at the undergraduate level that no really strong department would dream of permitting a medievalist to offer an undergraduate course in, shall we say, Renaissance and Reformation.

This then is the history, these then are the difficulties. What is required at the undergraduate level if the social studies are to make full contribution to the process of general education and if research and writing are to be restored to an earlier greatness of design and nobility of execution? I would suggest, first of all, that the social sciences should make the most important of all contributions to general education. We must be sure that all men and women who are to be called educated possess an adequate understanding of the cultural and institutional heritage that is theirs and that they are imbued with an equally lively sense of their responsibility as free citizens. These great aims are not to be accomplished by narrow and highly technical courses in the subject matter of the disciplines that comprise the social sciences. Any society rests its culture upon certain postulates and ideals that have framed the mind of man and that have lifted him up to nobility of aspiration, if not of conduct. The educated man is responsible only in so far as he has recapitulated vicariously the experience of his race and has formed patterns of conduct that are reasonably defensible in terms of a philosophy of history and culture. It is the task of the social sciences to acquaint man with his heritage so that change, whether evolutionary or revolutionary, may be informed and responsible. The postulates of any culture may be defined — they are our heritage — and they can be taught. They possess no absolute virtue, save in the sense that criteria of taste, of conduct, and of aspiration are absolute within the limited frame of a cultural era.

Perhaps all that the social sciences can contribute to general education in the western world today — and it is a great deal — may be expressed within the concept, "the nature and the development of a free society." Such a course, or courses, could not possibly be taught save by wise yet humble men who brought to the classroom and to their study a synoptic view of social and cul-

tural development and whose treatment was suffused with a philosophy of culture. It would, indeed, be enormously stimulating if three such courses were taught, under the same title and dealing with the same subject matter, with an acknowledged responsibility to general education, by an historian, a political scientist, and an economist. Such men would be obliged to search for principles, to view for themselves and their students the complex patterns of human development with philosophical perception and understanding, and to sort out from the mass of facts and trends of the past and present those great movements, those great men, and those great documents which mould a society.

In certain ages of our past — the fifth century, B.C., the Augustan Age, the thirteenth century, and the seventeenth century — men were lifted up from confusion and hopelessness to a noble and stalwart courage because they were able to fix their perspectives for the future by a bold and an almost ruthless examination of the anatomy of their own culture. I believe we may well be on the verge of such a great age today. A terrible war and the nihilistic forces that by so scant margin we mastered have compelled us to address ourselves to a careful examination of the destiny of man. It has imposed on us as teachers the high necessity of vocation. Science has released forces which may well destroy civilization as we know it unless we devote ourselves with fanatical determination to the creation in this world of a habitation for free men. Do we as political scientists really understand that the very concept of sovereignty was destroyed simultaneously with Hiroshima; do we as historians fully realize that the virtues of nationalism were on that day consumed? As in the great ages I have mentioned we stand face to face with grim realities that summon us to boldness, imagination, and a grand design for free men. It is to this high task that the social sciences must dedicate themselves.

General Education at Harvard

BY BYRON S. HOLLINSHEAD

I

IT IS sometimes remarked that educators keep performing the Indian rope trick. The Indian fakir spirals his rope in the air and then calmly sits atop it. The trick of the educators is even better. We sit suspended in the air and then throw the rope away. We had a theory, or rope, years ago. We could suspend the curriculum from something because we thought we knew what it was the curriculum was supposed to do. Now we are so preoccupied with our specialized concerns about the subject matter we forget about a theory. Any committee of educators, if forced to do it, will develop objectives on which they may be reasonably agreed. Then they will turn with relief to their preoccupations with subjects. If it later be discovered that the treatment of the subject does not produce the objectives previously agreed on, that is too bad, but there it is.

There are five theories of educational unity: religion, stateism, science, the great books, and ethical pluralism. A complete synthesis of these is impossible, yet some combinations may be made which come as close as we can devise to a theory on which education may be based. In its simplest terms we want education to develop in the student the desire to lead the "good life," to be a responsible citizen, and to be able to earn a living.

Having said that, we are immediately faced with three very knotty problems: how much commonness is possible considering individual differences; do we want education to promote social mobility or social solidarity; how far can formal education profitably extend?

The physical difference between Jack Dempsey and Mahatma Ghandi is a startling likeness compared to the mental differences between the boy at the top of the class and boy at the bottom. To put Ghandi in the same ring with Dempsey would be much more appropriate and humane than to put an I.Q. 80 in the same classroom with an I.Q. 140. Yet the general public would cry "murder" at the former and nod complacently at the latter.

Partly this is because our concept of democracy is confused between the Jacksonian idea of giving "the people" equality of power and the Jeffersonian idea of selecting high talent for leadership. In the schools we develop "social mobility" by specialism; we should develop "social solidarity" by general education. But there is considerable lost motion even in general education if we try to have all the students imbibe at the same spring under the same conditions.

It is a real question, then, how far up and how far out public education should try to reach. While the citizen can express his ideals in this respect by passing compulsory school laws moving the age of compulsory school attendance upward, by so doing he often clogs the school process more and more with the partially uneducable who must be taken care of in special classes or else bring the whole level of classroom performance down. In the same way, the development of out-of-school training for the young, exampled by the N.Y.A. and the C.C.C. during the depression, would be a strain on

school resources and would be posing questions about such education with which the average educator is not equipped to cope.

These questions obviously call for democratic compromise. For example, all pupils doubtless need certain basic information about nutrition. It is part of their general education. For some pupils the approach must be, "Eat an orange." For others, it is appropriate to discuss the importance of vitamin C with the information that oranges contain this vitamin. A tremendously important understanding of educational problems consists in being able to apply at the right time either the direct or the indirect approach—the hortatory suggestion to eat an orange or the information about vitamin C.

II

Assuming a unity of purpose and a reasonable concern for method we may ask what general relationships and concerns, aside from the occupational one, the individual has. He has a relationship with himself and with God, with his fellow humans and with the society of which he is a part, and with the various aspects of the physical world he discovers all about him. These three relationships would seem to correspond fairly well with the academic subjects we denominate as the humanities, the social studies, and mathematics and science. The answer, however, is not simply to name the fields of study, but to say what we want study of these subjects to accomplish.

Somehow, from the teaching of these subjects, we want to get the cultivated citizen. No analysis is altogether satisfactory, but what we are seeking may be roughly classified under intellectual qualities, personal qualities, and qualities prized in a democratic society.

It is easy to name the intellectual qualities, hard to define them, and still harder to say how they are to be taught. According to the Harvard Committee the abilities are: to think logically, to choose discriminatingly, to communicate effectively, and to discern relevance. Such abilities, of course, are not found in a "state of nature," nor can what goes to make up any one of these qualities be defined as if it were entirely separate from any of the other qualities.

What we mean by the personal qualities is hard to name but easier to define than the intellectual qualities. The person is such a composite of variable traits, any of which may be useful in some situations, that it is difficult to characterize with any exactness what the most useful traits would be. Perhaps the much abused term, "adjusted," is a reasonably satisfactory single characteristic, though the "unadjusted" person is frequently the one who makes the world progress. Whatever be the term, the person needs a "philosophy" which is satisfactory to him and not too objectionable to his fellow beings. More simply, he needs to know certain things about health and hygiene. He preferably has the qualities of sensitivity which give him some appreciation of the esthetic and imaginative. More profoundly, he subscribes to some system of higher loyalties not too much at variance with the prevailing code of conduct and morality, and he exemplifies this code in his daily living.

Finally, there are the qualities demanded by a democratic society. Though these have relationship to the personal qualities just discussed, they are none the less different. Both the intellectual qualities and the personal qualities mentioned would be useful in a fascist society as well as in a free society. There may well be general education for a fascist society, but its elements would not be the same as in our society. In America, one of the foci of learning must be an understanding of the meaning of democratic citizenship. This implies belief in government under law, in the freedoms enunciated by the Founding Fathers, in the Bill of Rights, in rule by the majority with minority rights protected—in short, commitment to the values implicit in a free society which is predominantly Christian.

Applying such objectives to the three subjects of the curriculum, science and mathematics, social studies, and humanities, is not easy. Obviously, some of these qualities are more readily taught by one subject than by another. Obviously, also, no

subject should ignore any one of the qualities. It is just here that we meet our greatest stumbling block. The teacher or instructor feels it to be enough if he knows his own subject and can teach it, without reference to any particular set of values. Why should he worry about the abstract qualities we have mentioned? He believes that they are learned by indirection and, indeed, some highly intelligent and imaginative students do learn them that way. The instructor may not want to interrupt the geometry lesson to teach logical thinking, yet he can never be sure that geometry gives a training in logical thinking unless he himself points out the connection.

The controversy between those who want to teach according to the internal logic of a subject matter and those who want to teach according to the needs of the student is long-standing and bitter. No useful purpose would be served by discussing it at length here. One aspect of it is neatly illustrated by a story told at Harvard about the inscription on the cornice of Emerson Hall. A committee of professors had decided that the inscription should be the saying of Protagoras, "Man is the measure of all things." When the professors returned to college in the fall they found that President Eliot had ordered the inscription changed to read in the Biblical words: "What is man that Thou art mindful of him."

The story illustrates the fundamental fact that man both measures and is measured. He measures the subject and the subject measures him. All the arguments of the functionalists versus the conservatives break down on this fundamental.

Therefore, if we consider method for the schools we must say the job needs to be done both ways. There are some students and some instances where the logic of subject matter may proceed unrestrained (vitamin C), and there are some students and some instances where the teacher must consider "suitability" (eat an orange).

For general education in the schools the "core" should be made up of the three subjects we have mentioned and the students in these "core" subjects should be differentiated only by ability in order that the bright might move faster than the dull. This "core" should take up a little over one-half the high school time with each of these subjects represented each year, though not necessarily in the same amount.

Superimposed on this differentiation of the "core" by abilities would be a further differentiation of the balance of studies according to the interest, motive, and aptitude of pupils into five concentration areas: language, mathematics and science, social studies, creative arts, and vocational work. Like the five fingers of the hand these concentrations would stem from the palm of general education.

Studies in the high school would be, then, of three types: general, special, and vocational. The general studies would be for all, regardless of interest or motivation, though the sections would be differentiated by ability. The special education consists of further training in foreign language, in mathematics and science, in social studies, or in creative arts. This could be thought of either as an extension and intensification of general education or as a preparation for a particular vocation. The vocational is thought of chiefly as direct training for entrance into technical occupations, business or the trades. This scheme carries out the advantages of interest and motivation. President Eliot once advocated the elective system, yet it definitely says there are some subjects more important than others which all students must know if they are to understand their heritage.

Obviously, if this scheme is to be effective, the schools must be prepared to guide with care and skill the differentiation of which we have spoken. If the schools are to take additional responsibility for advising the student, then of course the best information they can get about the individual is none too good. Cumulative records of student progress, the use of better testing devices, more recordings of teacher opinions are all indicated. If the single curriculum with no deviations is not the answer to our problems, then the more difficult task of careful advising according to student interest, motives, and ability is certainly in order.

The vast experience in using "screening" tests gained in World War II may add considerably to present school skill in this.

III

Entrance to college has often in the past been quite dependent on the presentation of a particular pattern of secondary school courses stressing in particular foreign languages, mathematics, English, and science. So great is the present diversity of high school offerings, and so widely different in quality are the approximately 30,000 high schools in this country, that high school graduation now means only the accumulation of 15 or 16 Carnegie units in almost any subjects. The Harvard National Scholarship boys have amply demonstrated that a bright youngster from an obscure high school is a better academic risk for the University than a medium ability boy from the best preparatory school in the land. However, the scholarship boy's preparation in mathematics and languages is often poor.

For this reason the requirement of a reading knowledge of a foreign language needs emphasis, although fulfilment of the requirement may be postponed to the end of the second college year. Similarly, deficiency in mathematics needs to be made up by a course enabling students from the poorer schools to gain an equal footing with students who are better prepared.

Aside from these minor provisions to equalize entrance achievement, the new proposal is that all students should begin at about the same time the courses in general education we shall list. At present the concentration or special education requirements are six year-courses or approximately one-third of the entire college course. The requirements for specialization are administered by departments which are, of course, standing committees of the faculty. In the same way, it is proposed that there should be a committee of the college faculty to administer similar requirements in general education.

The college, of course, has the responsibility to carry on the general education begun in the high school though on a different and more advanced level. This means general education courses in the sciences, social studies, and humanities. The proposal is that a one-year course be required in each of these fields and that a second group of three year-courses in general education be chosen by the student from a list of such courses prepared by the committee or department of general education.

The required first courses would not be "surveys" in the usual sense of the term. The aim would be depth of penetration rather than encyclopaedic knowledge, but it is hoped that the treatment would be broad and general rather than narrow and specialized. A good example of what is meant is provided by a humanities course I. A. Richards has given at Harvard called "Foundations of Our Culture." In the first term students in the course read Homer, the Old Testament, Plato, and the New Testament. In the second term they read Dante's *Divine Comedy*, a list of plays by Shakespeare, Milton's *Paradise Lost*, and Tolstoy's *War and Peace*.

The course in social studies would deal with the evolution of a free society and would consist of source readings from writers like Locke, Montesquieu, Rousseau, Adam Smith, Burke, Bentham, and Mill in addition to a topical treatment of the development and history of a free society.

The required course in science would give a choice of physical science or biological science. For the less-prepared non-major in science the approach to the physical science course would be at least partly historical and philosophical. For the concentrator in physics or engineering the required course would be in biological science. For the life science concentrator the required course would be in a more mathematical and topical course in physical science than the one proposed for non-science majors.

It is intended that the first group of courses in general education should be taken before the beginning of the third year of college. But concern for general education should not end at that time. The first courses simply provide a common fund of knowledge which should aid students to com-

municate with each other more effectively as they branch off into their specialties.

The second group of general education courses may be even more significant in deepening understanding of our common heritage. In the list to be developed it is hoped that fine arts will be represented; it is hoped that a treatment of American thought and institutions may be a widely elected course; it is hoped that science concentrators may take a general education course in science in the later years of college; and it is hoped that a large proportion of students will take a general course in philosophy toward the end of their college career. Such a course in philosophy might synthesize the whole tradition of western man by treating the flow of ideas coming from Hellenism and Rome, from Judaism and Christianity, from science and rationalism, from the struggles of man for justice under law in a free society.

From the foregoing it is at once apparent that the proposals of the Committee on the Objectives of a General Education are not startling deviations from present practice. A Harvard undergraduate, according to this program, would take about one-third of his work in general education, he would continue to take courses in his concentration for about one-third of his time, and he would have almost one-third left for electives which might contribute either to his general education or to his broader knowledge of a specialty.

Unlike many proposals and practices in general education the Harvard program emphasizes selectivity rather than comprehensiveness; it emphasizes crucial periods or "towering personalities" rather than "the names and numbers of all the horses and riders." The plan suggests no change in degree requirements and is not in the direction of "getting in" general education during a particular period, say the first two years. Quite the reverse. There is no suggestion of setting up a separate college, though provision is made for setting up a new committee or department to care for the needs of general education.

It is uncertain, of course, what will happen to these proposals as they are put into practice. Yet so self-commendatory are they to those who have thought the elective system was getting out of hand in the direction of specialization, that the appeal for acceptance should be fairly strong. At least it is true that the proposals will have a considerable effect on college education generally and they should stimulate useful discussion throughout the nation.